Indirect Effects of COVID-19 on Maternal, Neonatal, Child, Sexual and Reproductive Health Services in Kampala, Uganda

Authors

Jessica Burt[1], Joseph Ouma[3], Alexander Amone[3], Lorna Aol[3], Musa Sekikubo[2], Annettee Nakimuli[2], Eve Nakabembe[2], Robert Mboizi[3], Philippa Musoke[3], Mary Kyohere[3], Emily Namara[3], Asma Khalil[5], Kirsty Le Doare[4,5]

1. School of Medicine, University of Leeds, Leeds, UK

2. Department of Obstetrics and Gynaecology, Makarere University, Kampala, Uganda

3. Makarere University Johns Hopkins University, Kampala, Uganda

4. Maternal Vaccines Programme, Medical Research Council/Uganda Virus Institute at the London School of Hygiene and Tropical Medicine, Entebbe, Uganda

5. Infection and Immunity, St. George's, University of London, London, UK

Corresponding author:

Name: Kirsty Le Doare

Postal address: MRC/UVRI@LSHTM Uganda Research Unit, Entebbe, Uganda

Email: kiledoar@sgul.ac.uk

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ABSTRACT

Background: COVID-19 has impacted global maternal, neonatal and child health outcomes. We hypothesised that the early, strict lockdown which severely limited the movements of individuals in Uganda will have impacted access to services.

Methods: An observational study, using routinely collected health data from Electronic Medical Records was carried out, utilising data from July 2019 to December 2020 in Kawempe district, Kampala. The mean and 95% confidence intervals were calculated pre-COVID (July 2019 – February 2020) and post-COVID (March-December 2020). The means were compared using t-tests, and the monthly totals analysed as to whether they lay within or outside the normal range, compared to the previous 9 months.

Results: Antenatal attendances decreased 96% in April 2020 and remain below pre-COVID levels. We found a rise in adverse pregnancy outcomes for Caesarean sections (5%), haemorrhages related to pregnancy (51%), stillbirths (31%) and low-birth-weight (162%) and premature infant births (400%). We noted a drop in neonatal unit admissions, immunisation clinic attendance and delivery of all vaccinations except measles. There was an immediate drop in clinic attendance for prevention of mother to child transmission of HIV (now stabilised) and an increase of 348% in childhood malnutrition clinic attendance. Maternal and neonatal deaths, immediate post-natal care and contraceptive provision remained within normal limits.

Conclusion: The response to COVID-19 in Uganda has negatively impacted maternal, child and neonatal health, with the biggest and longest lasting impact seen in complications of pregnancy, stillbirths and low-birthweight infants likely due to delayed care-seeking behaviour. The decline in vaccination clinic attendance has implications for all vaccine-preventable diseases, with a cohort of infants currently unprotected. Further consideration of the impacts of restricting movement and limiting access to preventative services must be undertaken in responding to future pandemics if key maternal and child health services are to be maintained.

KEY QUESTIONS

What is already known?

- The response to COVID-19 has been shown to have indirectly impacted on maternal, child, neonatal, sexual, and reproductive health.
- This is largely related to access to services and fear of contracting COVID-19 in outpatient departments.
- There has been very little data published on the health impacts of the COVID-19 response in Uganda.

What are the new findings?

- Antenatal attendances decreased dramatically in April, followed by increased numbers of c-sections, haemorrhage related to pregnancy, stillbirths and low-birthweight, premature and malnourished infants.
- Newborn immunisations against polio, tetanus, diphtheria, hepatitis B, haemophilus influenzae, rotavirus and pneumococcus decreased significantly
- Postnatal, sexual, and reproductive health services remained stable.

What do the new findings imply?

- Uganda has been less affected directly by COVID-19 infections, the indirect impacts are far-reaching and will have future influences on population health.
- There is a degree of resilience within the healthcare service, but many services were adversely affected by the lockdown leading to poorer pregnancy and neonatal outcomes
- Antenatal and vaccination services are of particular importance in ensuring the safety of mother and child and must be prioritised in the responses to future pandemics.

INTRODUCTION

Uganda, as with many nations in the World Health Organization (WHO) Africa region, has largely avoided the considerable infection rate and death toll from COVID-19 that other nations have seen [1], with 38,085 confirmed cases and 304 deaths reported as of the 15th January 2021 [2]. Whilst this is likely under-representative of the true morbidity and mortality [3], Uganda has successfully minimised the spread and direct impact of COVID-19 within its borders through its early, rapid and severe response. However, maternal and child health services were severely impacted by these measures during the height of the lockdown, which may have indirectly affected morbidity and mortality.

Effects of COVID-19

Symptomatic COVID-19 infection in pregnancy is linked to worse maternal and neonatal outcomes than for pregnancies without COVID-19 [4-6]. Studies across the UK and USA have also shown increased preterm birth, stillbirth, small for gestational age babies and neonatal mortality over the COVID-19 period and in relation to infection in pregnancy [7].

However, the indirect impacts of COVID-19 could amount to up to a 38.6% increase in maternal mortality, and 44.7% increase in child mortality per month across 118 low and middle income countries [8]. The main factors proposed are disruptions to childbirth services and antenatal care (ANC) such as the management of pre-eclampsia and supplementation advice, wasting and curative child services,[8] which the WHO have documented as being affected in many locations [9]. Additionally, disruptions to family planning services including access to contraception and safe abortions, will result in an additional rise in maternal deaths, abortion-related complications, and a large unmet need for contraceptives [10]. Further impacts on maternal and child outcomes may be seen through issues surrounding the provision of prevention and management of HIV [8 11 12], reduced lactation support [13] and conflicting guidance on whether to avoid breastfeeding if infected [14]. These impacts have been reported in some low-resource settings [9 15 16], particularly with reduced antenatal

attendances, linked to transportation restrictions, fear of transmission and lack of antenatal education [16].

COVID-19 in Uganda

Preparation and readiness measures against COVID-19 in Uganda began between January and March 2020, focusing on health systems strengthening and capacity building, aided by early allocation of WHO funding [17 18]. From the 2nd March, the public were informed of the threat of COVID-19, with education and training subsequently disseminated [17]. Testing focused on contacts of identified cases and those returning from travel, with population-wide lockdown measures imposed quickly after the first case in Uganda was reported on 21st March 2020 [19 20]. This included border closures, port-of-entry screenings, and quarantines for travellers [17]. By the 25th March this escalated to a ban on group-gatherings and non-essential internal travel, recommendation to work from home, and close schools [17 21]. The travel restrictions included the cessation of all public transport and a ban on the use of private vehicles without explicit permission to travel [22]. At a local level, non-essential visits to Kawempe National Referral Hospital (KNRH) were prohibited for a short time, which included ANC and childhood immunisation clinics.

This paper aims to quantify the indirect impact of COVID-19 on maternal, neonatal and childhood outcomes at KNRH in Kampala.

METHODS

This was a single-site observational study, which utilised retrospectively collected data, based in KNRH. This is a large, urban hospital with over 21,000 deliveries per annum, 200 antenatal clinic visits and 100 child admissions to hospital per day[23]. The hospital provides preventative and curative care during pregnancy and intrapartum, newborn and post-natal care, a paediatric ward and vaccination services at a standard indicative of care in urban Uganda. After the initial lockdown period (4 weeks without outpatient services), measures to reduce the number of women attending ANC included reducing the number of

appointments per day from 150 to 90 for ANC and all women <26 weeks gestation being sent away to return after 30 weeks. For infants, the vaccination clinic remained operating routinely. During the initial phases of lockdown (April and May 2020) 35/60 doctors were reassigned to acute care at COVID centres in anticipation of a large number of COVID19 cases but 53 nurses were recruited at the same time with results-based financing support raising the number of nurse/midwifes on site from 184 to 237 after April 2020.

Patient and Public Involvement

Patients were not involved directly in the formation of this study. We have involved women in a separate, dedicated qualitative study about their experiences of antenatal care during the pandemic[24].

Ethical Approval

This study received ethical approval from the School of Medicine Research Ethics (SOMREC 2020-148), Committee Uganda Council for Science and Technology (HS913ES).

Data Collection

Data were retrospectively collected in January 2021, by hospital staff with access to the Electronic Medical Records (EMR) system. This system is part of the Uganda Ministry of Health (MoH) eHealth Policy, Strategy and Implementation Plan and utilises the District Health Information Software 2 (DHIS2) [25]. The DHIS2 indicators for which data were collected are detailed in the Supplementary Materials and were taken from health management information system (HMIS) data, which is reported to the MoH, covering pregnancy preventative services, pregnancy curative services, childbirth, care of the newborn, postnatal care, preventative childcare, curative childcare, preventative services for women of reproductive age, curative services for women of reproductive age and unavailability of medicines and commodities. Monthly totals were gathered for the period of July 2019 to December 2020. In accordance with the Sex and Gender Equity in Research

guidelines, pregnancy, childbirth and sexual health related indicators are reported for those of the female sex, and no segregation is made between male and female sex or gender for childcare indicators as this was not part of the reporting data [26].

Neonatal mortality was calculated as the sum of immediate neonatal deaths and deaths from neonatal Sepsis 0-7 days, neonatal sepsis 8-28 days, neonatal pneumonia, neonatal meningitis, neonatal jaundice, premature baby (as condition that requires management) and other neonatal conditions.

Statistical Analysis

Data were input into Microsoft Excel and SPSS Statistics version 26 (IBM, UK) for collection and analysis purposes. Childbirth and care of the newborn indicators were calculated as a percentage of deliveries that month. For each indicator, the data were divided into pre-COVID (July 2019 – February 2020) and post-COVID (March – December 2020), as public restriction measures were introduced in March 2020. For the pre-COVID data, the mean, standard deviation (SD) and 95% confidence intervals (95% CI) were calculated. The mean, SD and 95%CI was then calculated for the post-COVID period for each indictor. The means were compared using an independent sample t-test, with the null hypothesis as no difference between pre-COVID mean and post-COVID mean and statistical significance set at p=0.05. Additionally, for each of the post-COVID months, we visually determined if the data lay within the normal distribution or was outside the upper and lower limits of the 95% CI. Data which lay outside of the 95% CI were deemed to have changed from the normal distribution and thus we hypothesised that those indicators were impacted by COVID-19.

RESULTS

Over the study period there were 14,401 ANC attendances, 33,499 deliveries, 111,658 attendances for childhood services and 57,174 SRH service attendances.

Pregnancy

Preventative Services

Prior to March 2020, the mean number of attendances for antenatal services was 933 per month (95% CI 815-1051) and since lockdown this has reduced by 26% to 693 per month (95% CI 499-889, p=0.040). There was complete closure of services for the first four weeks of the lockdown with a slow return from May 2020 onwards. Corresponding declines were seen in iron and folic acid supplementation and intermittent antimalarial prophylaxis, blood pressure monitoring and tetanus vaccine receipt with services remaining below the pre-COVID mean through to December 2020 (Figure 1). New services to test urine and haemoglobin have been introduced during the lockdown that were not previously provided. Prevention of mother to child transmission of HIV services (PMTCT) and HIV testing were stopped for 4 weeks at the start of lockdown but have since regained similar levels (mean number of women per month offered PMTCT services pre-COVID 104 (95% CI 60-148) vs post-COVID mean 102 (95% CI 68-136), a decrease of 2% (p=0.934). Figure 1 displays the monthly totals for each indicator.

Curative Services

There was a 173% increase in the number of pregnant women receiving care for high blood pressure, pre-eclampsia / eclampsia (mean before March 2020 83 (95% CI 11-155) vs post-lockdown mean 206 (95% CI 101-311, p=0.27)). At the same time there was a drop of 25% in the number of pregnant women receiving treatment for fever or bacterial infection (mean before March 57 (95% CI 7-107) vs mean post-lockdown 43 (95% CI 35-50, p=0.530)), a 23% decrease in maternal blood transfusions (pre-lockdown mean 207 (95% CI 197-220) vs post-lockdown mean 159 (95% CI 136-182), p<0.001) and a decrease of 12% in the number of admissions to intensive care (pre-lockdown mean 636 (95% CI 590-683) vs post-lockdown mean 557 (95% CI 493-621), p<0.001). Figure 1 highlights the monthly totals for each indicator, with antepartum haemorrhage included in the supplementary materials.

Labour and Delivery

There was a monthly delivery mean of 1797 (95% CI 1654 – 1939) before March 2020 (pre-COVID) compared to 1913 (95% CI 1783-2042) post-lockdown, a rise of 6%, (p=0.185). The proportion of C-sections as a percentage of total deliveries increased by 5%, from 39% (95% CI 36-42%) pre-March to 41% (36-46) post-March 2020 (p=0.508), as did the number of stillbirths by 31% (pre-March 2020 mean 84 (95% CI 36-132) vs 110 (95% CI 99-121) post-March 2020, p=0.005) and haemorrhages related to pregnancy by 51%, from a pre-COVID mean of 55 (95% CI 26-85) vs 87 (76-99) post lockdown (p=0.015). There was no change in maternal mortality (p=0.536). Figure 2 displays the monthly totals.

Care of the Newborn

Of the total number of deliveries, there was an increase of 162% in the proportion of low birthweight babies (5% of all deliveries pre-March 2020 (95% CI 2-7) to 12% post lockdown (95% CI 10-15%), p<0.001) and a 400% increase in the proportion of premature infants (1% (95% CI 0-3%) vs 14 (95% CI 11-17), p<0.001) post lockdown. At the same time, the proportion of the monthly deliveries with infants admitted to the neonatal unit decreased by 25% (39% (95% CI 33-46%) vs 30% (95% CI 28-32%), p=0.003). The mean in-facility neonatal mortality as a percentage of monthly deliveries remained stable at 4% (95% CI 2-5%, p=0.527) (Figure 2). The percentage of infants started on immediate and exclusive breastfeeding dropped by 8% from 97% (95% CI 95-98%) to 89% (95% CI 80-99%, p=0.102). Data on neonatal resuscitations and Kangaroo Mother Care (KMC) were not captured before Jan 2020. Graphical representation of the KMC data and breastfeeding are included in the supplementary materials.

Post-natal care

The mean number of women receiving immediate routine post-natal care services (within 24 to 48hrs of delivery) pre-COVID was 2218 (95%CI 1583 – 2854) compared to 1974 (95% CI 1894-2055) post-lockdown, a decrease of 11% (p=0.396). The mean number of women treated for puerperal sepsis pre-COVID was 4 (95% CI -2 – 9) compared to 3

(95% CI -1-7) post lockdown (a decrease of 12%, p=0.883). There were no cases of COVID-19 during this study.

Child Health Services

Immunisations were offered on all 9 scheduled immunisation days in every month in 2020. The mean number of immunisation clinic attendances in the pre-COVID period was 5946 (95% CI 4973 – 6919) compared to 6409 (95% CI 5642-7177) post-lockdown (p=0.393), although there was a decrease seen in April 2020. Despite maintained vaccine clinic attendance, the number of vaccinations provided varied; BCG remained stable (1810 (95% CI 1554-2066) vs 1816 (1717-1916), p=0.958), there was a decrease in oral poliovirus vaccines (OPV) 1, 2 or 3 (47% (767 (95% CI 243 – 1290) vs 408 (95% CI 324-492), p=0.093)), DPT / Penta 1, 2, or 3 (32% (603 (95% CI 460 – 746) vs 411 (95% CI 285-502) p=0.013)), Rotateq 1, 2, or 3 (38% (483 (95% CI 352-615) vs 302 (95% CI 242-362) p=0.006)) and pneumococcal vaccine (PCV10) (29% (589 (95% CI 447-730) vs 417 (331-503), p=0.023)). There was an increase of 98% in measles vaccination (48 (95% CI 29-68) vs 95 (80-111) p<0.001). The mean number of children receiving Vitamin A supplementation increased 95% (from 82 (95% CI 10-155) to 161 (118-203), p=0.037), and medication for deworming by 228% (from 26 (95% CI 7-45) to 86 (95% CI 51-120), p=0.006). Further detail for immunisations is seen in figure 3, with deworming including in the supplementary materials.

The number of children being treated for malnutrition increased by 348% from 3 (95% CI 0-7) to 14 (4-24), p=0.043 after the lockdown was implemented. However, the mean number of children being treated in-facility reduced for pneumonia by 56% (from 45 (95% CI 34 – 55) to 20 (8-31), p=0.002), malaria by 54% (70 (95% CI 49-91) vs 32 (20-44) p=0.002) and diarrhoea by 19% (69 (95% CI 59-80) vs 56 (95% CI 48-69) post-lockdown, p=0.093) (Figure 3).

Sexual and Reproductive Health

The was a decrease in the mean number of women receiving the oral contraceptive pill (OCP) of 40% (60 (95% CI 29-90) vs 36 (95% CI 23-48) after March 2020, p=0.124), condoms of 62% (160 (95% CI -12-331) vs 61 (95% CI -60-183), p=0.282), and intrauterine devices (IUD) (111 (60-162) vs 59 (36-82) p=0.051) whilst injectable contraceptives and implants increased by 133% (77 (95% CI -7-162) vs 180 (95% CI 138-222), p=0.016). Access to emergency contraception also decreased by 81% from 44 (95%CI 4-83) to 8 (95%CI -4-21), p=0.043. The number of sterilisation procedures and number of women treated for sexually transmitted diseases remained low both pre and post-lockdown. Figure 4 displays the monthly totals. The number of abortions and sterilisations related to abortions decreased by 39% from 298 (95% CI 180-416) to 180 (115-246), p=0.052, as did the number of recipients of HIV testing and counselling services by 20% (4145 (95%CI 2893-5396) to 3331 (95%CI 2702-3960), p=0.237) No data was available from 2019 for the management of incomplete abortions, but a sharp decrease was seen from June to December 2020 when compared to previous months.

Availability of Medicines

Several shortages were noted in medication and vaccination availability both pre- and post-lockdown (Table 1).

Table 1: Medicine availability in the pre-lockdown and post-lockdown periods

	Months of Unavailability	
	Pre-COVID (July 2019-February 2020) n=8	Post-COVID (March-December 2020) n=10
Oxytocin	4 September – December	6 May – August, November, December
Amoxicillin	7 August – February	6 May – August, November, December
Oral rehydration salts	8 July – February	7 May – August, October-December
Antimalarials	3	6

	September – November	May – August, November, December
Measles vaccine	1 February	2 April, September
Therapeutic foods	1 February	10 March-December
Oral contraceptives	0	0
Condoms	0	0
Intrauterine devices	0	0

DISCUSSION

Despite calls for the prioritisation of antenatal services and the consideration of the indirect impacts of lockdown restrictions on maternal health [8 11 27], the data from our study highlights that maternity, newborn and child health services were severely affected by COVID19 restrictions.

Similar to our findings, facilities in rural Uganda saw a drop in antenatal attendances,[28] as have hospitals in Kenya, Ethiopia, Zimbabwe and Rwanda in the first months of the pandemic [29-36]. The aim of preventative services is to reduce maternal and newborn morbidity and mortality and any reduction in their availability can give an indication of the potential longer-term impacts – including increased rates of maternal anaemia, puerperal sepsis, stillbirth, low birth weight, preterm birth, malaria infection, pre-eclampsia/eclampsia, mother to child transmission of HIV and neonatal tetanus [37].

There are many proposed reasons why the ANC services decreased so drastically in April 2020 in Uganda. The national guidance at the start of the pandemic resulted in the closure of public transport, which a large proportion of patients rely on to access healthcare facilities, hence impacting their physical ability to access care, as has been reported in Uganda [28 38] and in other countries[29 33 35]. Other themes which have been reported to have affected attendances are the lack of healthcare staff, fear of infection, disruption of services due to COVID-19, lockdown orders restricting movement, and the increased price of transport [32]. These themes have been highlighted in other studies in the region [28 35 38],

indicating the need to consider the implications of lockdown measures on public confidence in healthcare in future emergencies.

The rise in stillbirths, C-sections, haemorrhages (APH/PPH), stillbirths, preterm and low-birthweight babies and neonatal resuscitations are likely a result of the lack of antenatal care in March to May, and is likely to indicate fewer than the recommended minimum of 8 contacts with healthcare services during the antenatal period [37]. Additionally, the unavailability of certain medications due to import restrictions and reallocation of finances to the pandemic may have impacted the ability to treat conditions such as PPH, exacerbating already stretched healthcare provision. The COVID-19 pandemic also impacted on childbirth and deliveries across the region[4 39], with some reports of decreased hospital deliveries [29-31]. Facilities in Kenya have reported an increase in the number and rate of C-sections and fresh stillbirths [33], increased PPH [30] and an increase in the maternal deaths, disproportionately affecting adolescents [33]. The age of mother was not included in our dataset and may shed a valuable light on any population-level disparities in outcomes. Prioritising safe and effective antenatal, intrapartum and postnatal care will be vital for future health emergencies.

Sudden sharp changes in neonatal outcomes have been reported in South Africa, where an increase in neonatal mortality was linked to the disruption of services and diversion of resources due COVID-19 necessities [40]. Conversely, our data shows change a few months after the initiation of COVID-19 lockdown protocols, indicating short term resiliency in the health system in the provision of care for the newborn, but a bigger impact of the lack of ANC on neonatal outcomes. As seen with our data, a hospital in Malawi found an increase in babies born earlier and at lower birth weights, however the same study did not find this in a Zimbabwean hospital[41] suggesting differences between countries that remain unexplained.

A decrease in children attending hospital, as seen in KNRH, was also seen in South Africa [40] and Ethiopia [36]. This is likely also associated with fear of attending healthcare

settings, inaccessibility, and a reduction in self-referrals, as seen with ANC [36]. Conversely, there was an increase in malnutrition attendances, likely due to the societal impacts of COVID-19 restrictions on child health and nutrition [42]. The lack of therapeutic foods available may have been affected by border closures and trade restrictions, in a similar manner to medication availability in Nigeria [43].

Our data show a reduction in antenatal tetanus and all childhood vaccines following lockdown with the exception of BCG, putting an estimated 20,000 children at risk of mortality from vaccine-preventable diseases such as tetanus and polio[44]. Uganda was declared polio-free in 2010 [45], however, the situation remains precarious due to the possibility of imported virus in surrounding countries where polio is not yet irradicated [46]. The likelihood of a potential infectious disease outbreak can be predicted based on the proportion of coverage lost by a period of reduction in immunisations and The WHO estimates that at least 80 million children will be at risk of diseases like tetanus, polio, diphtheria and measles due to disruption of vaccination programmes during the pandemic[47]. A reduction in the uptake of childhood immunisations were also seen in England [48] and Singapore [49] at the start of the pandemic, highlighting the universal impact of COVID-19 on child health. The follow-up response to vaccine catch-up in this pandemic is of key importance in mitigating future outbreaks and further impacts on child health [50 51].

Whilst our data shows some resiliency in sexual health and contraceptive services, the reduction in HIV clinic attendances is worrying and requires further outreach work to ensure the provision of care. PMTCT services bounced back quickly, in part due to international funding support mechanisms in place, such as that from USAID [52]. Sexual and reproductive health services have also been impacted across other East African nations. Facilities in Kenya and Ethiopia reported contraceptive services were limited and decreases seen in the family planning attendances due to the closure of services [31 36], although national

data from Kenya show no change overall in the usage of services [33]. The decrease in the number of abortions in our setting was similar to other studies from Kenya and Ethiopia [33 36].

Clinical and Research Implications

COVID-19 has not happened in isolation, and the continuation of the changes in antenatal services, maternal and neonatal outcomes, and reduced number of children being treated for pneumonia and malaria in hospital through to December 2020 may also be influenced by other social factors. Many staff and patients were affected by restrictions to movement in October and November 2020 due to political campaigning and riots relating to the presidential elections. This highlights the susceptibility of health and healthcare services to wider events, reinforcing the need for resilience within health services.

Strengths and Limitations

Whilst the limitations of this study lie in the use of data from a single site, collected retrospectively, this has allowed the inclusion of over 33,000 births, 14,401 antenatal attendances and 111,658 childhood immunisations, highlighting the massive impact on this population. Furthermore, the use of data from EMR rather than direct patient records mean this data is likely an under-representation of the true values of each indicator. Statistical comparison using data from the full year of 2019 would have enabled a better understanding of how 2020 compared to the time before COVID-19. Even with these documented limitations, our findings reinforce the importance of considering maternal and child health in future pandemic responses.

CONCLUSIONS

Maternal, neonatal, child, sexual and reproductive health were all impacted by the restrictions imposed by the Ugandan government in response to COVID-19. Responses to future pandemics must include the prioritisation of preventative care including antenatal and child health services to prevent delayed impacts on maternal, neonatal and child health.

Furthermore, any disruptions to immunization schedules must be mitigated as rapidly as possible, to prevent further infectious disease outbreaks.

LEGENDS

Figure 1

Monthly totals for pregnancy preventative and curative services from July 2019 to December 2020. Key: _ Average --- 95% Confidence Interval. ANC=antenatal clinic; IPT=intermittent preventative therapy; Tx=treatment; ICU=intensive care unit; BP=blood pressure, PMTCT=prevention of mother to child transmission.

Figure 2

Monthly totals for childbirth (labour and delivery) related outcomes and neonatal indicators from July 2019 to December 2020. Key: _ Average --- 95% Confidence Interval. C-section=caesarean section; NICU=neonatal intensive care unit; PPH=post-partum haemorrhage

Figure 3

Monthly totals for indicators of child health (preventative and curative) from July 2019 to December 2020. Key: _ Average --- 95% Confidence Interval. EPI=extended programme on immunisation; BCG=Bacillus-Callmette-Guerin; OPV=oral polio virus; DPT=diphtheria, pertussis, tetanus

Figure 4

Monthly totals for reproductive health services from July 2019 to December 2020. Key: _ Average --- 95% Confidence Interval.

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COMPETING INTERESTS

None

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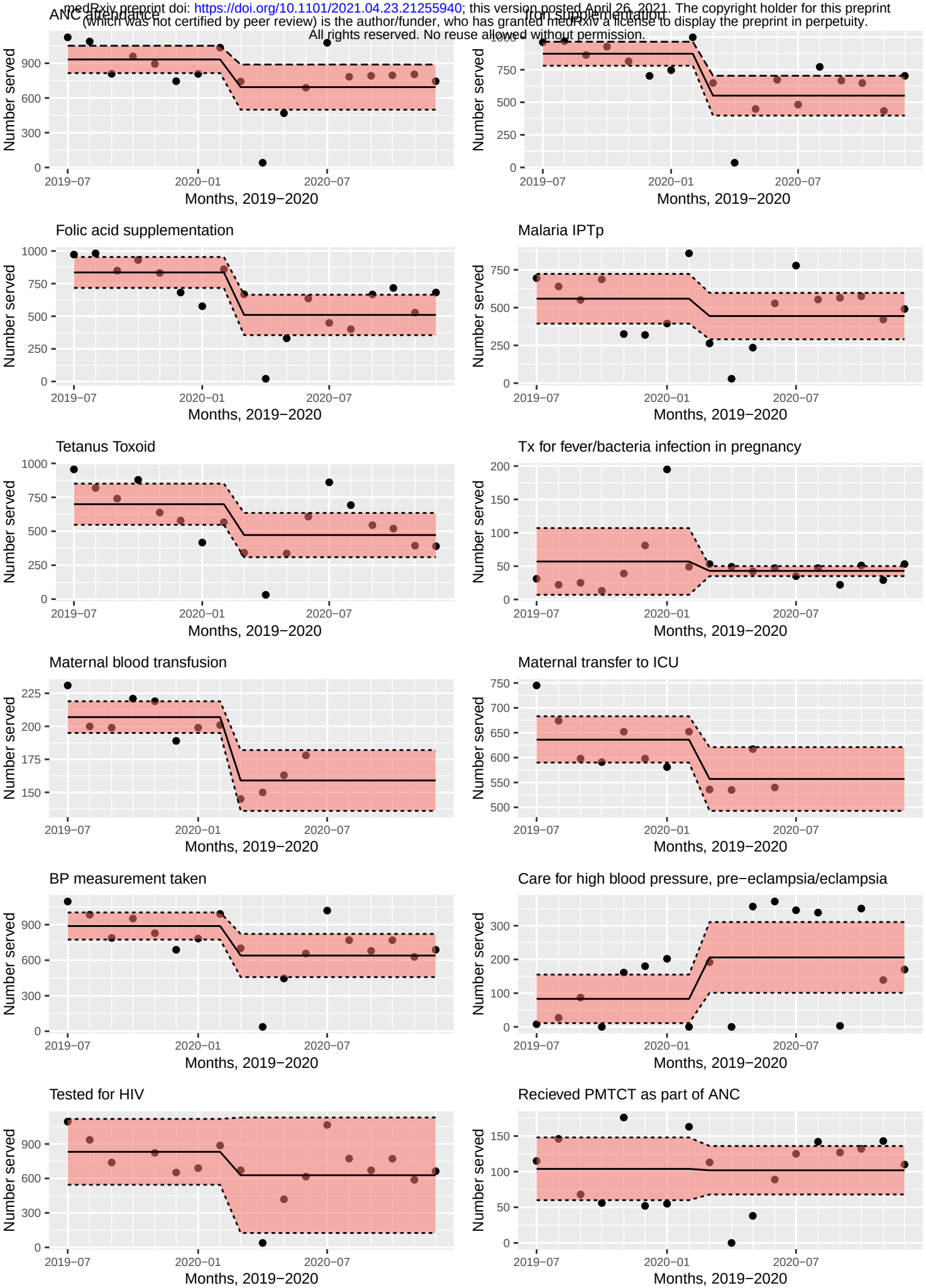
Antenatal visit and therapies per month from July 2019 to December 2020

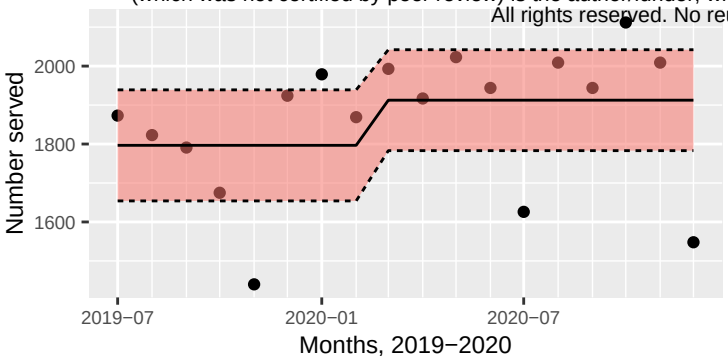
__Average; −−− 95% Confidence Interval



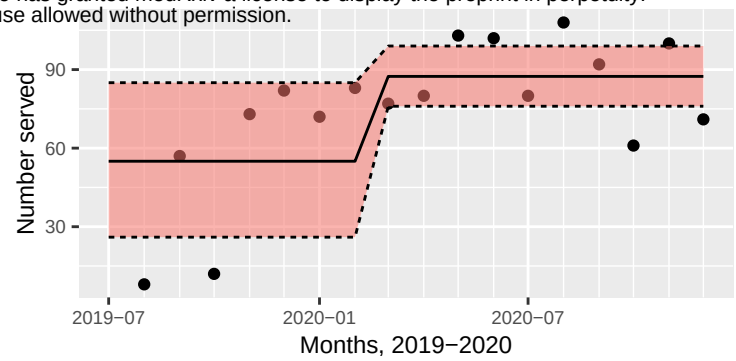
Total deliveries and delivery outcome per month from July 2019 to December 2020

__Average; −−−95% Confidence Interval

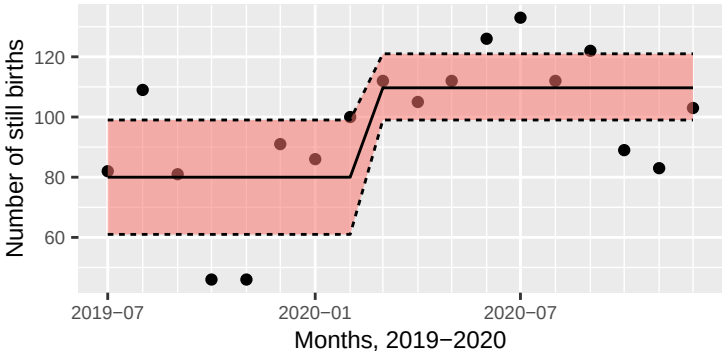
Total deliveries



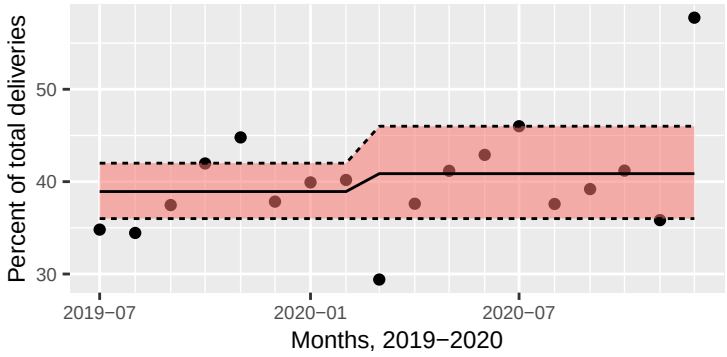
Haemorrhage related to pregnancy (PPH)



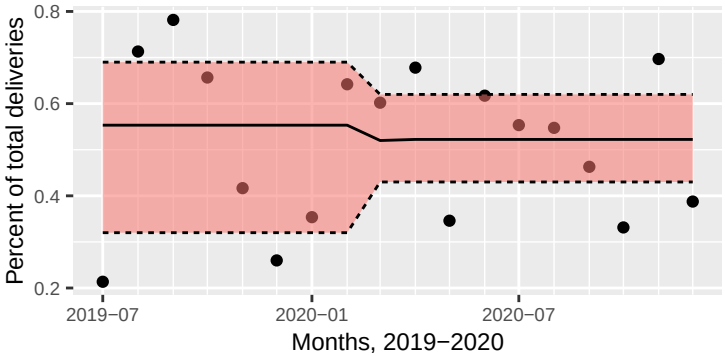
Still births



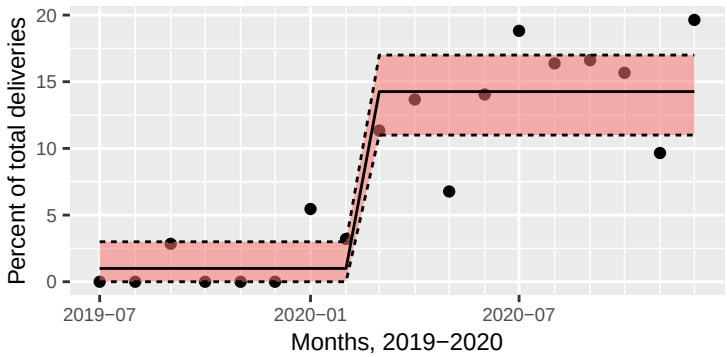
C−Sections



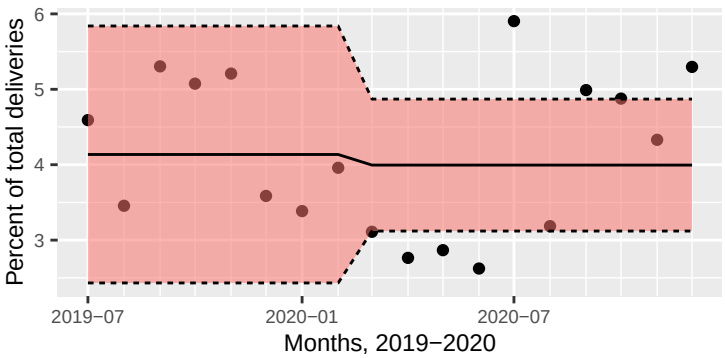
Maternal deaths



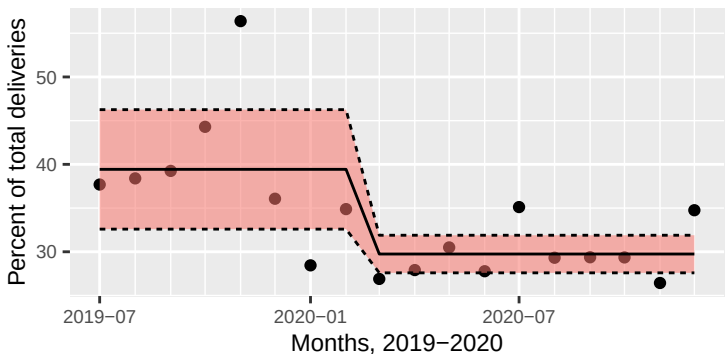
Pre−term births



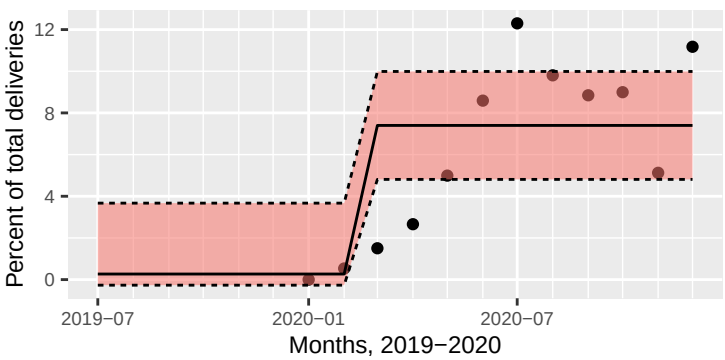
Neonatal mortality



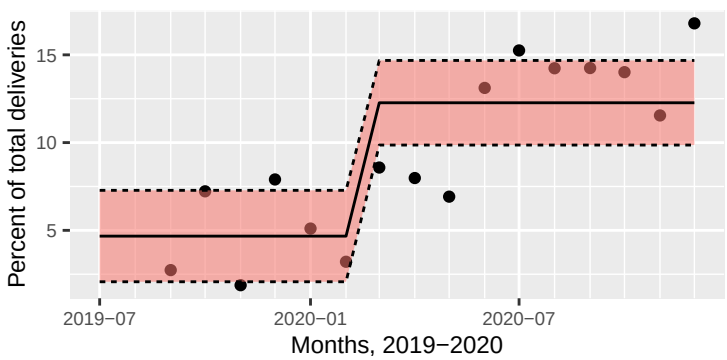
Admissions to NICU



Neonatal resuscitations

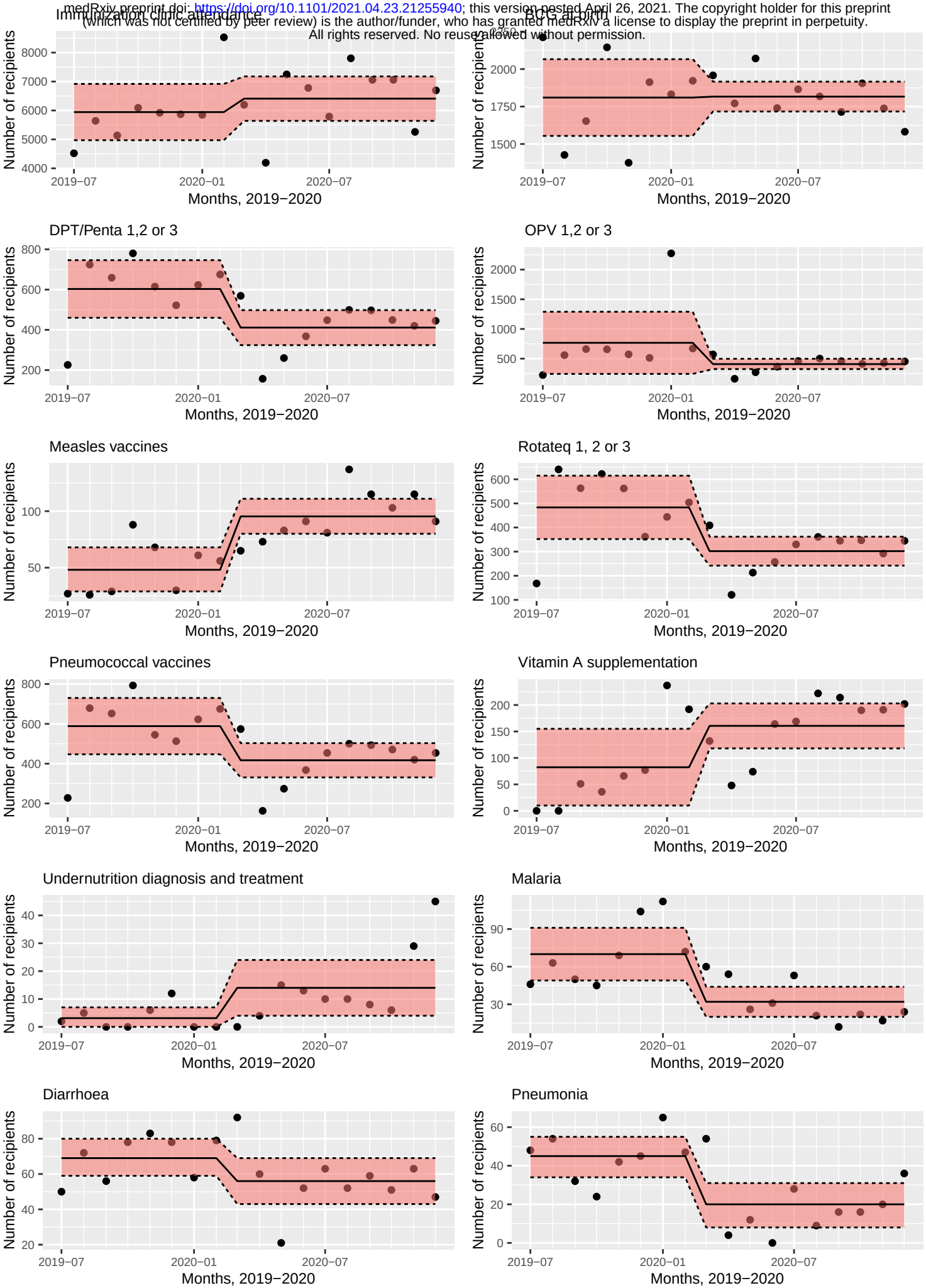


Low birth weight



EPI and Child Health services per month from July 2019 to December 2020

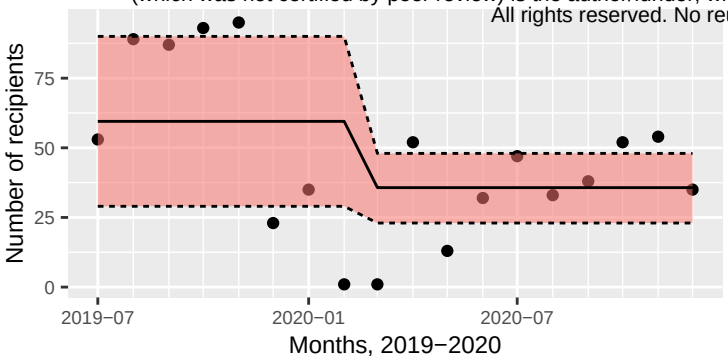
__Average; −−−95% Confidence Interval



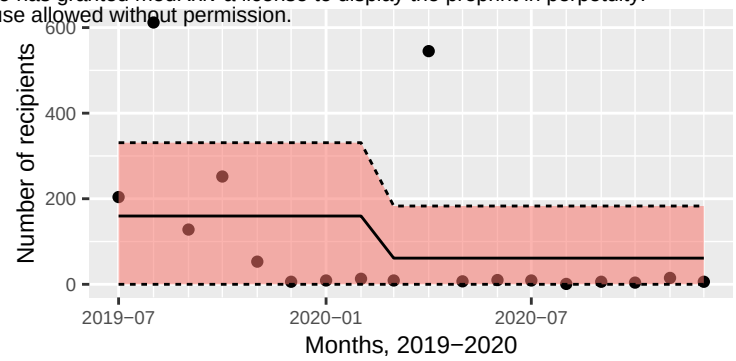
Reproductive Health services per month from July 2019 to December 2020

__Average; −−−95% Confidence Interval

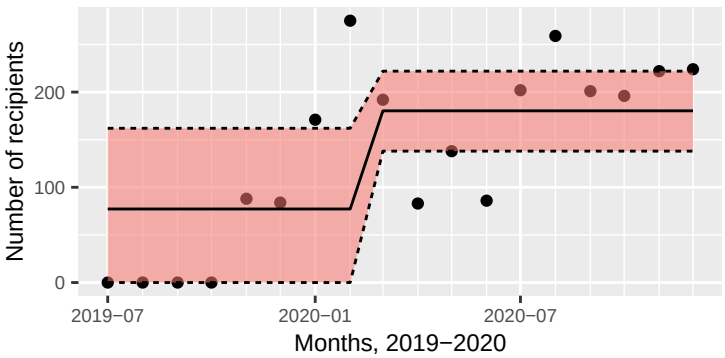
Oral Pill



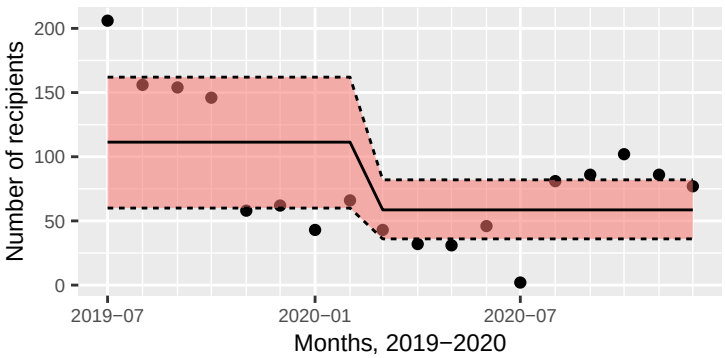
Condom



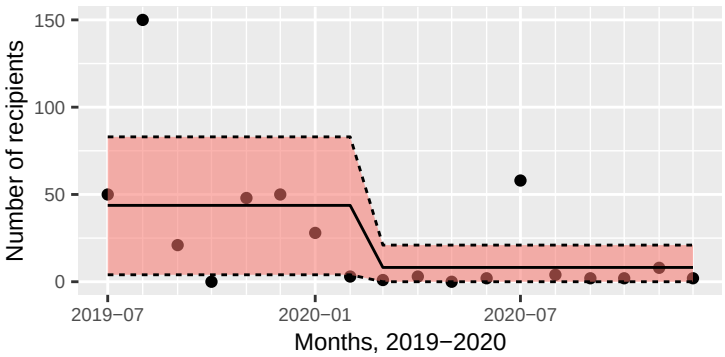
Implants/Injectable contraceptive



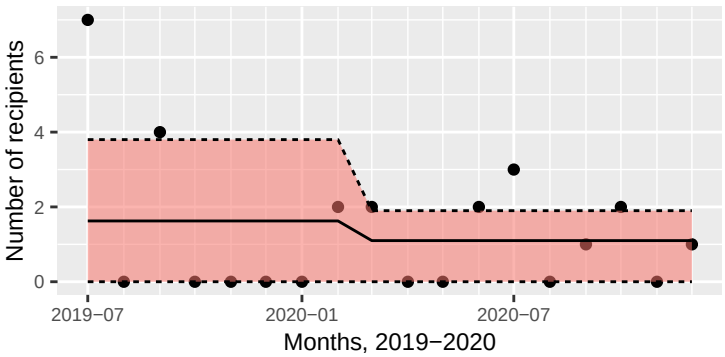
Intrauterine Devices



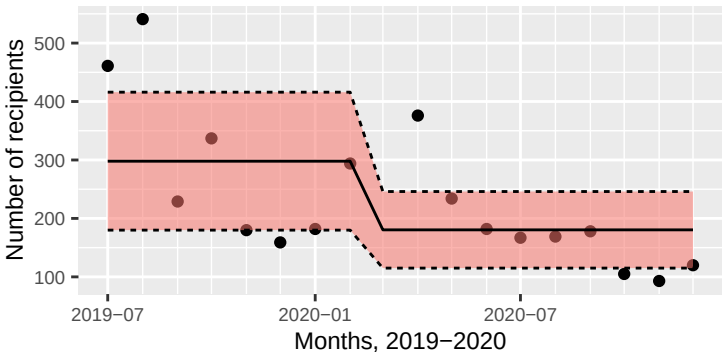
Emergency pills



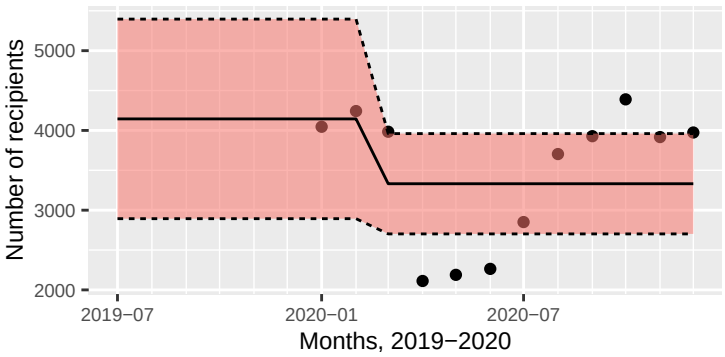
Sterilization procedures



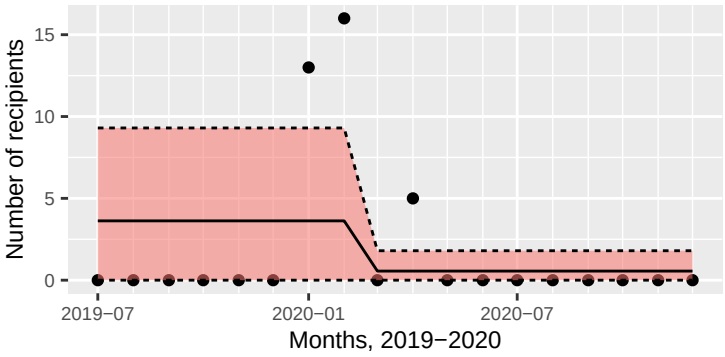
Abortions



HIV Counseling and Testing



STI treatment



Incomplete abortions