

# THE IMPACT OF COVID-19 ON MATERNAL HEALTH AND FAMILY PLANNING IN VIET NAM

Estimates and modelling scenarios

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COVID-19 threatens to become one of the most challenging tests faced by humanity in modern history. COVID-19 has the potential to take lives, overwhelm health systems, and trigger lasting geopolitical change. The implications of COVID-19 can go far beyond the strain posed on Intensive Care Units and Infectious Disease Control departments. In countries around Asia and the Pacific, health systems are likely to be challenged to balance the demands of responding directly to COVID-19, while simultaneously engaging in strategic planning and coordinated action to maintain essential health service delivery, mitigating the risk of system collapse. Many countries are currently implementing transmission control measures such as lockdowns, travel bans and social distancing. The consequent disruption of services on already overstretched health systems and the diversion of resources from essential sexual and reproductive health (SRH) services are expected to increase the risk of maternal and child morbidity and mortality, as shown in past humanitarian crises. This technical brief presents estimation of the impact of COVID-19 pandemic on maternal health and family planning in Viet Nam.

Viet Nam is a diverse country, where population groups have different degrees of access to key SRH services based on economic status, location of residence, and other socio-economic determinants. It is likely that the COVID-19 pandemic will affect these population groups to different extents. Overall, the COVID-19 outbreak has been limited and well contained in Viet Nam, but access to healthcare has been affected in 2020. This is due to direct and indirect causes, such as disruptions to SRH service provision as well as transportation in some parts of the country, particularly in more remote areas; people's fear of seeking health care, which leads to postponing and/or cancelling essential medical appointments including for antenatal and postnatal care; and shortage of SRH commodities in health facilities, among others.

## Methodology and assumptions

To capture the potential impact of the pandemic in Viet Nam, we have stratified the population in **four different groups**, based on the comparison of available data on maternal deliveries and use of modern contraceptives in the first quarters of 2019 and 2020, as reported by the Maternal and Child Health Department and General Office for Population and Family Planning of the Ministry of Health. Group 1, corresponding approximately to 30% of the population, are considered to have very good socio-economic conditions and very good health care capacities to respond to the COVID-19 pandemic; Group 2, around 40% of the population, have good socio-economic conditions and health care capacities. Groups 3 and 4, respectively 20% and 10% of the population, have average or weak socio-economic conditions and health care capacities.

Key health parameters at baseline for each population groups were estimated based on updated national maternal mortality ratio (from Census 2019) and contraceptive prevalence rate (from Population Change Survey 2018), and health facility based deliveries (from MISC, 2014). Detailed baseline values are illustrated in Table 1 below.

**Table 1: Population groups and baseline values, 2019**

Population Group	Socio-economic conditions / health care capacities	Maternal Mortality Ratio (per 100,000 live births)	Skilled Birth Attendance and Health-facility deliveries (%)	Contraceptive prevalence rate (%)
Group 1 (30%)	Very Good	41	100	76.5
Group 2 (40%)	Good	44	98	76.5
Group 3 (20%)	Average	46	95	76.5
Group 4 (10%)	Weak	100	80	76.5
<i>National average</i>	-	46	93	76.5

To estimate the potential impact of COVID-19 on these groups, we have performed a series of analyses using the Lives Saved Tool (LiST) and FamPlan modules of Spectrum (August 2019 version), a modeling software developed by Avenir Health. This methodology is coherent with the Johns Hopkins University (JHU) analysis<sup>1</sup> and global standards, only using different assumptions.

For example, because we are looking at the longer-term impacts of COVID-19, we have reflected in these analyses the effect of a reduction in access to contraception on maternal mortality. It is important to note that drops in contraceptive prevalence due to COVID-19 would have an impact on the numbers of unintended pregnancies that could be experienced in the country in 2020. The increase in pregnancies (and in live births) will in turn affect the number of maternal deaths, which are predicted to increase. Maternal deaths are also expected to increase due to the drop in access to key maternal health services, as illustrated in the assumptions paragraph below.

For each population group, we have modelled two scenarios of COVID-19 impact on Maternal Health and Family Planning: a **Best case scenario**, which models a smaller impact, and a **Worst case scenario**, which instead models a more considerable impact for each population group.

<sup>1</sup> Robertson, T. et al. (2020). *Early estimates of the indirect effects of the COVID-19 pandemic on maternal and child mortality in low-income and middle-income countries: a modelling study*. [The Lancet Global Health, Vol 8 \(7\), 12 May 2020](#).

The assumptions of COVID-19 pandemic's impact estimate a drop in coverage in **three key health services: skilled birth attendance (SBA), deliveries in health facilities and users of modern contraceptives (condoms, pills, injectables and implants)**. The effects of the pandemic on these key services are modelled during 2020 only, assuming that the effects of the pandemic will be felt mostly in this current year in Viet Nam. The COVID-19 scenarios (best and worst cases) are modelled against a 'Full coverage' scenario, where instead of all key health services continue to increase gradually between 2020 and 2030 as before the pandemic, so as to reach full coverage by 2030 (in line with the SDG agenda targets for 2030).

In the table below, we detail the assumptions used in the models for each population group, for best and worst case scenarios for maternal health and family planning. It is important to bear in mind that the results of these analysis are results of modelling and, therefore, must be intended as indicative of the potential effect of COVID-19 on SRH services. The assumptions of the models were defined to be in line with other available studies (e.g. JHU). As more data becomes available, these assumptions and estimates could be refined.

**Table 2: Assumptions of drop in SRH services by population groups**

	GROUP 1: Very good health capacity and socio economic conditions	GROUP 2: Good health capacity and socio economic conditions	GROUP 3: Average health capacity and socio economic conditions	GROUP 4: Weak health capacity and socio economic conditions
<i>Population.Percentage</i>	<i>30%</i>	<i>40%</i>	<i>20%</i>	<i>10%</i>
<b>Maternal Health</b> <u><b>BEST CASE SCENARIO</b></u>	<b>No Change</b> compared to baseline	<b>- 5%</b> coverage of SBA and health-facility deliveries	<b>- 10%</b> coverage of SBA and health facility deliveries	<b>- 20%</b> coverage of SBA and health facility deliveries
<b>Maternal Health</b> <u><b>WORST CASE SCENARIO</b></u>	<b>- 5%</b> coverage of SBA and health-facility deliveries	<b>- 10%</b> coverage of SBA and health facility deliveries	<b>- 20%</b> coverage of SBA and health facility deliveries	<b>- 50%</b> coverage of SBA and health facility deliveries
<b>Family Planning</b> <u><b>BEST CASE SCENARIO</b></u>	<b>No Change</b> compared to baseline	<b>No Change</b> in condoms and pills use, <b>- 3%</b> in implants and injectables	<b>- 3%</b> condoms and pills use, <b>- 5%</b> implants & injectables	<b>- 5%</b> condoms and pills use, <b>- 10%</b> implants & injectables
<b>Family Planning</b> <u><b>WORST CASE SCENARIO</b></u>	<b>No Change</b> compared to baseline	<b>- 3%</b> condoms and pills use, <b>- 5%</b> implants & injectables	<b>- 5%</b> condoms and pills use, <b>- 10%</b> implants & injectables	<b>- 10%</b> condoms and pills use, <b>- 20%</b> implants & injectables

PROJECTION RESULTS

The Impact of COVID-19 on Maternal Health: Maternal Mortality Ratios (MMRs) and Maternal Deaths

COVID-19 could have a considerable impact on Maternal Mortality Ratios (MMRs), which would increase for all groups in this analysis. Population **Group 1** would see a lower increase in its MMR, because of the small reduction modelled in access to SBA and facility-based delivery services in their scenarios (ranging from no change to -5% only). In this group, MMR would **increase from 41/100,000 live births to 43/100,000 live births in the worst case scenario**, and **maternal deaths would increase only by 18 additional maternal deaths**.

Figure 1: MMR Projected increase 2020-2030, COVID-19 Impact, Population group 1 (30%)

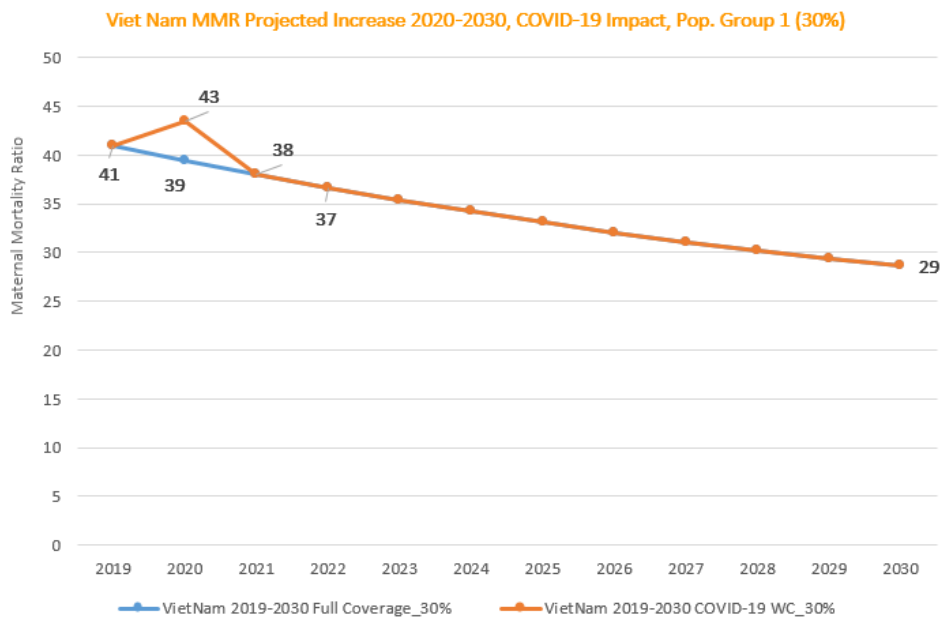
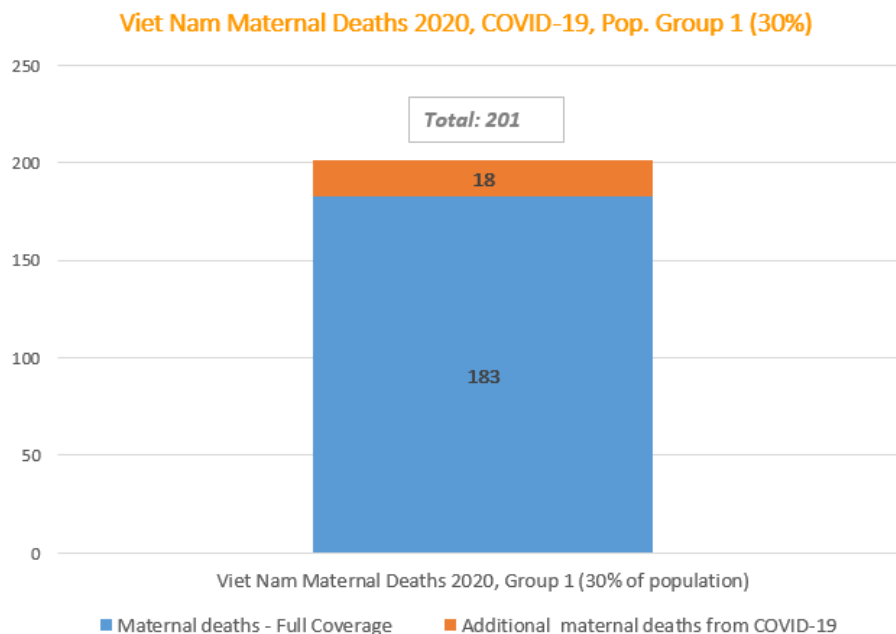


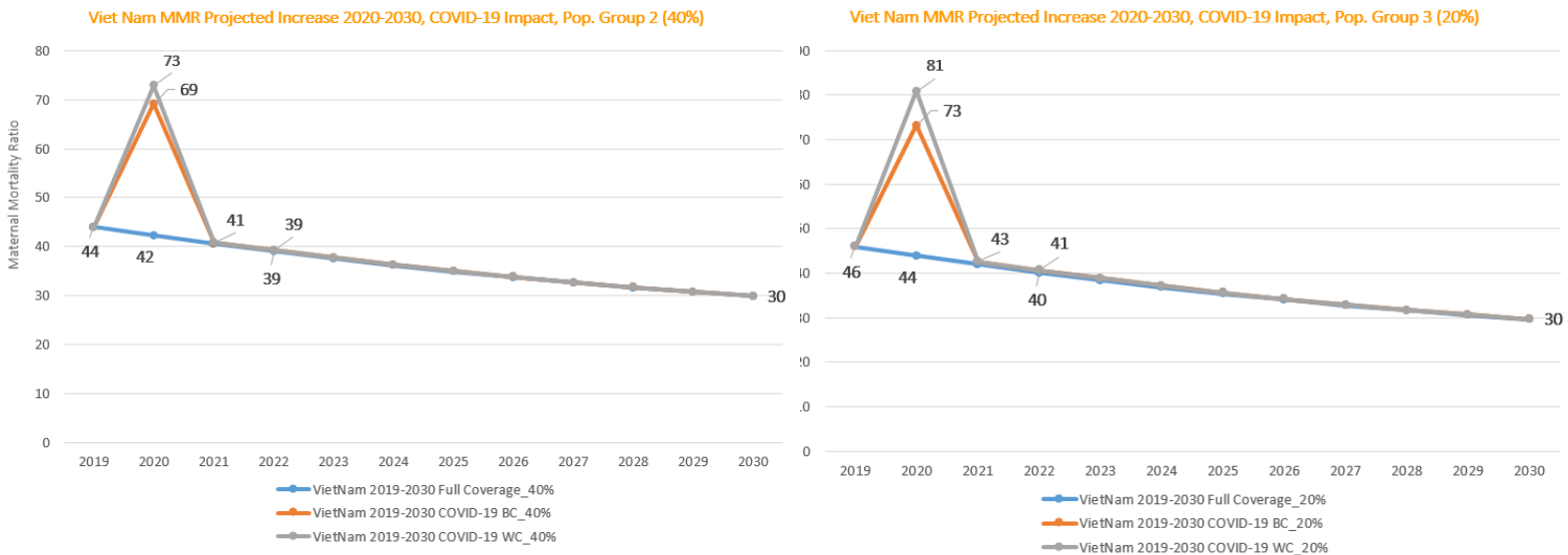
Figure 2: Maternal deaths projected increase in 2020, COVID-19 Impact, Population group 1 (30%)



For **Groups 2 and 3**, instead, the impact of COVID-19 on MMRs and maternal deaths could be more severe: these groups had higher baselines of maternal mortality, and were also projected to see a bigger reduction in health services (up to –20% for Group 3). Because in these projections SBA and facility-based deliveries would drop below 95% coverage, we could see a more severe impact on MMRs and maternal deaths. Having a coverage of health facility deliveries above 95% is considered a critical threshold at which many maternal deaths can be averted, therefore if such coverage drops below that level, as in our scenarios, the effects on MMRs and maternal deaths will be substantial.

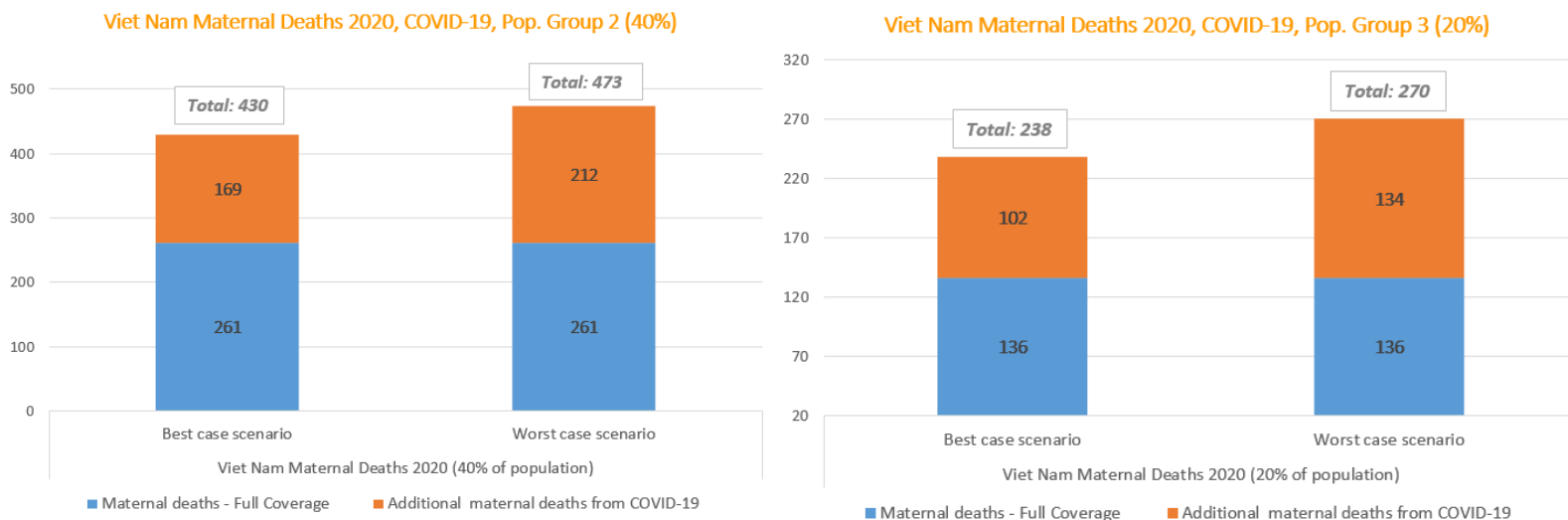
As a result, MMRs would spike up considerably for these two population groups, surging from 44/100,000 to 69 or 73/100,000 for Group 2, and from 46/100,000 to 73 or 81/100,000 for Group 3 for the best and worst case scenarios respectively.

Figures 3 & 4: MMR Projected increase 2020-2030, COVID-19 Impact, Population group 2 (40%) and 3 (20%)



In parallel with the increase in MMR, these two population groups could also experience additional numbers of maternal deaths due to the reduction in SBA and facility-based deliveries during the pandemic.

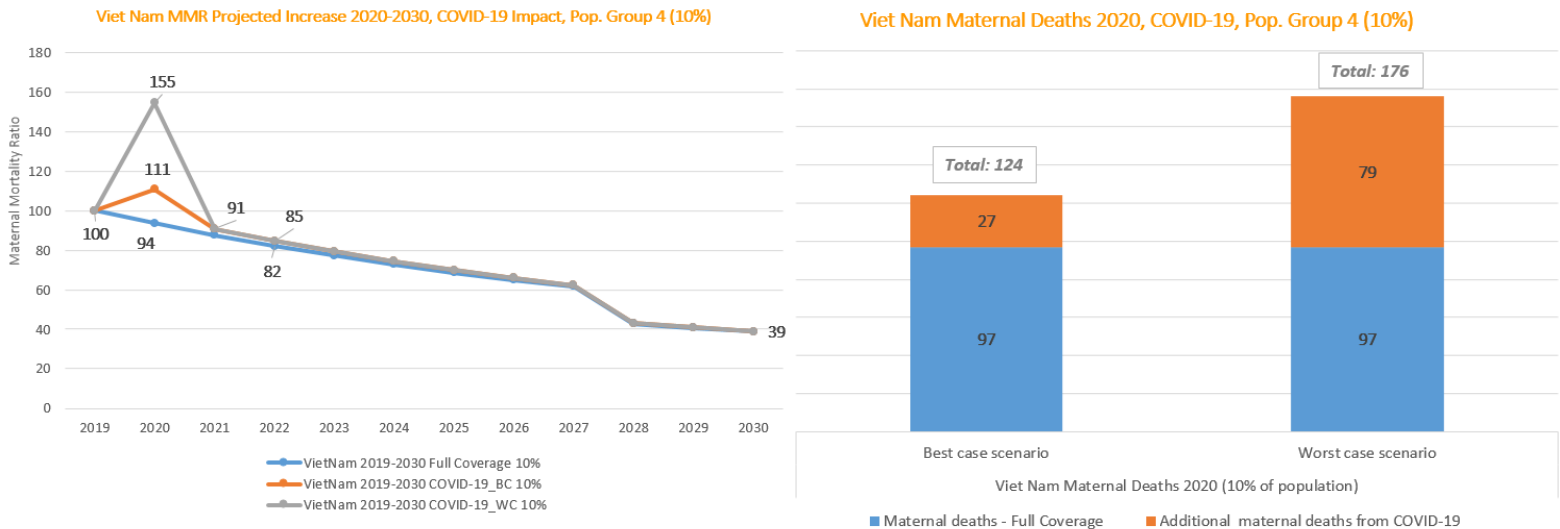
Figures 5 & 6: Projected increase in maternal deaths in 2020, COVID-19 impact, Population groups 2 and 3





Lastly, for population **Group 4**, the impact of the pandemic on MMR and maternal deaths could also be very severe. This population group was considered to have the most severe impact on access to health services (-20% and -50% for best and worst case scenario respectively), and it had a smaller coverage of facility-based deliveries at baseline (80%). As a result, MMR could increase in this group from 100/100,000 to 111 or 155/100,000 live births in best and worst case scenarios, and we could see an additional 27 or 79 maternal deaths due to COVID-19.

Figures 7 & 8: Projected increase in MMR and maternal deaths in 2020, COVID-19 impact, Population group 4



## NATIONAL AVERAGES OF MMRs AND MATERNAL DEATHS

The estimations of the overall impact of COVID-19 on national maternal mortality for all population groups are presented in Figures 9 and 10. From a total of 677 maternal deaths that were expected to happen in Viet Nam in 2020 before the pandemic, an additional 298 maternal deaths might occur in the best case scenario (increase by 44% compared to 2019), or 443 additional maternal deaths (increase by 65%) may occur in the worst case scenario in 2020. Maternal Mortality Ratio will follow a similar trend, increasing to 62/100,000 or 69/100,000, respectively, from the national baseline of 46/100,000.

Figure 9 & 10: Estimation of national MMR and total Maternal Deaths in 2020 in the context of the COVID-19 pandemic in Viet Nam

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