

# mCCT Estimates

## Programme Impact

### Absolute Number of Vaccines

Table 1 shows estimates of the total number of vaccines administered in the seven mCCT districts on an “annualised” basis. To calculate the annualised amount we estimate the effect of the programme if every town had been simultaneously rolled in on the 1st of January 2022.

For example, to interpret the first row of Table 1: Without the programme we think there would have been 391,833 Penta-1 vaccines administered in the 7 mCCT districts. With the programme we think 443,938 Penta-1 vaccines would have been administered. This leads to an increase of 52,540 Penta-1 vaccines in total and we think there’s a 95% chance the impact lies between 26,628 and 82,360.

### Percent Point Estimates

To calculate the percentage point effects we take the estimated number of annualised vaccines and divide by births in 2020.

Essentially, we divide the columns of Table 1 by the 2020 census births.

Table 2 shows our estimates in terms of percentage point changes in coverage. The credibility intervals here should be interpreted very loosely as our uncertainty about the denominator is orders of magnitude greater than our estimation uncertainty of the programme impact.

Table 1: Annualised Estimates of Total Vaccines Administered Across 7 mCCT Districts

Vaccine	N Vax No Programme	N Vax With Programme	Programme Effect
penta1	391,833 (379,336, 404,664)	443,938 (423,975, 473,034)	52,540 (26,628, 82,360)
penta2	370,857 (361,246, 381,476)	380,073 (365,341, 401,724)	9,115 (-9,862, 30,568)
penta3	399,303 (386,571, 412,845)	404,323 (385,523, 427,821)	5,371 (-17,524, 31,495)
bcg	388,486 (373,375, 405,278)	456,023 (421,193, 506,877)	68,260 (27,268, 116,088)
measles1	366,042 (352,711, 381,546)	390,283 (367,859, 418,728)	24,043 (-3,910, 54,829)
measles2	309,503 (297,081, 322,719)	286,964 (266,765, 312,484)	-23,092 (-48,197, 3,577)

Table 2: Annualised Estimates of Coverage Across 7 mCCT Districts, 2020 births used for coverage

Vaccine	Coverage No Programme	Coverage With Programme	Percentage Point Effect
penta1	66.1 (64, 68.2)	74.9 (71.5, 79.8)	8.9 (4.5, 13.9)
penta2	62.5 (60.9, 64.3)	64.1 (61.6, 67.7)	1.5 (-1.7, 5.2)
penta3	67.3 (65.2, 69.6)	68.2 (65, 72.1)	0.9 (-3, 5.3)
bcg	65.5 (63, 68.3)	76.9 (71, 85.5)	11.5 (4.6, 19.6)
measles1	61.7 (59.5, 64.3)	65.8 (62, 70.6)	4.1 (-0.7, 9.2)
measles2	52.2 (50.1, 54.4)	48.4 (45, 52.7)	-3.9 (-8.1, 0.6)

## Calculation Details

*Here I describe why our calculations are different to the previous estimates.*

Our estimates are different now for two key reasons:

- We’re correctly “annualising” the programme effect now.
- We’re using data from the entire year, rather than just multiplying baseline number of vaccines in the last month pre-treatment.

### Annualising

The percentage change effect we calculated previously was the overall average effect of the programme, but we didn’t adjust the effect size correctly when annualising to reflect the staggered rollout of the programme.

Because of the staggered roll-out, some districts have smaller treatment effects than others because it takes some time for the programme to have an effect. When calculating the annual effect, we want our calculations to reflect the counterfactual where all districts are treated for a year. Our updated estimates now do this.

### Baseline Number of Vaccines

Before, we calculated percentage point increases using the number of vaccines administered in the month preceding treatment for each town as the baseline. Now, we’re estimating the number of vaccines in each week of 2022 under counterfactual scenarios of treatment (all towns rolled in on 1st Jan 2022) and control (no programme at all). Comparing the number of vaccines administered and corresponding coverage rates now reflects a fuller picture of the programme effect and the seasonality of the data better.