

# #1148 Pneumococcal conjugate vaccine schedule change effect on routine childhood immunization coverage in Burkina Faso, 2023: a multi-phase household cluster survey

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## INTRODUCTION

- ❖ In 2013, Burkina Faso introduced 13-valent pneumococcal conjugate vaccine (PCV13) using three primary doses without a booster dose (3+0) at 2, 3, and 4 months of age.
- ✓ PCV13 coverage was maintained >90% since 2015 (admin data).
- ✓ Post-introduction, there was a decline in PCV13-type pneumococcal meningitis cases across age groups,
- ✓ Yet, serotype 1 — covered by the PCV13 — remains the predominant cause of pneumococcal meningitis across all demographics.
- ❖ In June 2021, Burkina Faso changed its PCV13 schedule from a 3+0 schedule to a 2+1 schedule (given at 2, 4, and 9 months of age), aiming to reinforce herd immunity and duration of protection.
- ❖ The schedule change may lead to out-of-sync with other vaccines given at 2, 3, and 4 months, and potentially to reduced dose 3 coverage.
- ❖ We conducted a national vaccine coverage survey to assess implantation of the 2+1 schedule.

## METHODS

- ❑ We conducted a cross-sectional household vaccine coverage survey to assess the 2+1 schedule implementation in Burkina Faso.
- ❑ We utilized a two-stage cluster sampling method stratified by region and urban/rural residence following World Health Organization 2019 methodology.
- ❑ Children aged 12-35 months were enrolled in the country's thirteen regions.
- ❑ We compared PCV13 coverage and median age of administration between children born before June 1, 2021 (3+0 eligible) and after (2+1 eligible).
- ❑ Using data from a similarly designed cross-sectional survey from August 2020, we compared coverage of all antigens and median age of PCV13 dose 3 in 2023 vs 2020.

## RESULTS

- ❑ In the 15,148 households screened across the country's 13 regions, we included the 4,020 children with available vaccine cards in the analysis.
- ❑ Figure 1 shows the distribution of households screened across the country and figure 2 shows the distribution of study participants according to eligibility for PCV 13 vaccine.

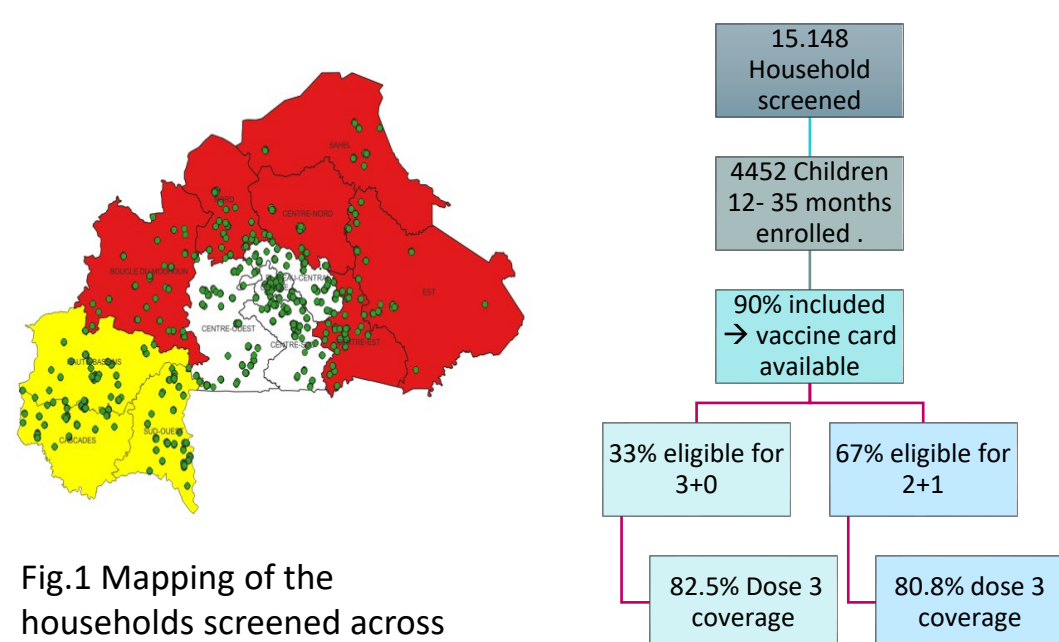


Fig.1 Mapping of the households screened across the country (red insecure, white secure)

Fig2. inclusion logigram and according to PCV 13 administration schedule.

- ❑ Coverage of PCV13 dose 1 ranged between 81% in Plateau central region and 95% in Centre-Nord region. This coverage was lower than Pentavalent dose 1 in all regions (figure 3).
- ❑ Regardless of schedule, PCV13 dose 3 coverage was 82% nationally, ranging from 57% (Sahel) to 90% (Centre-Est) (Figure 4). PCV13 dose 3 was lower than Pentavalent dose 3 and MR vaccine in all regions.
- ❑ Figure 5 shows the comparison of 2020 vs 2023 vaccine coverage of antigens given at the same time (Pentavalent, PCV13 and Rotavirus). For each vaccine, 2023 coverage was lower than that in 2020.

Fig3. National and regional coverage of vaccines administered at two months in the Burkina Faso (%) 2023 coverage survey

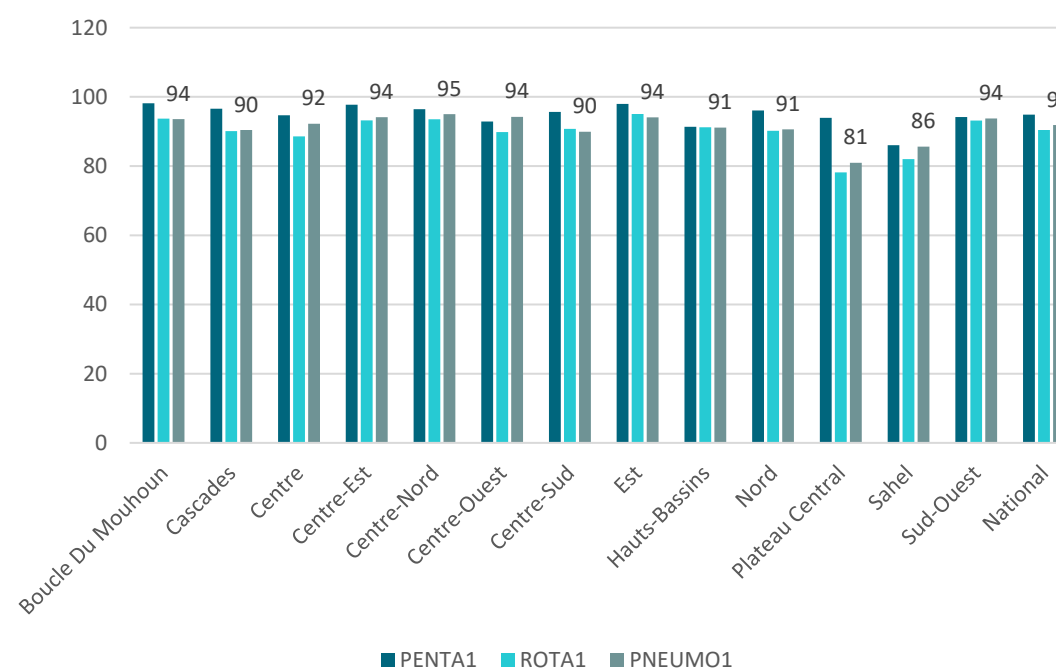


Fig.4 National and regional coverage of Pentavalent, PCV 13 and Rotavirus dose 3 and MR1 (%) 2023 coverage survey

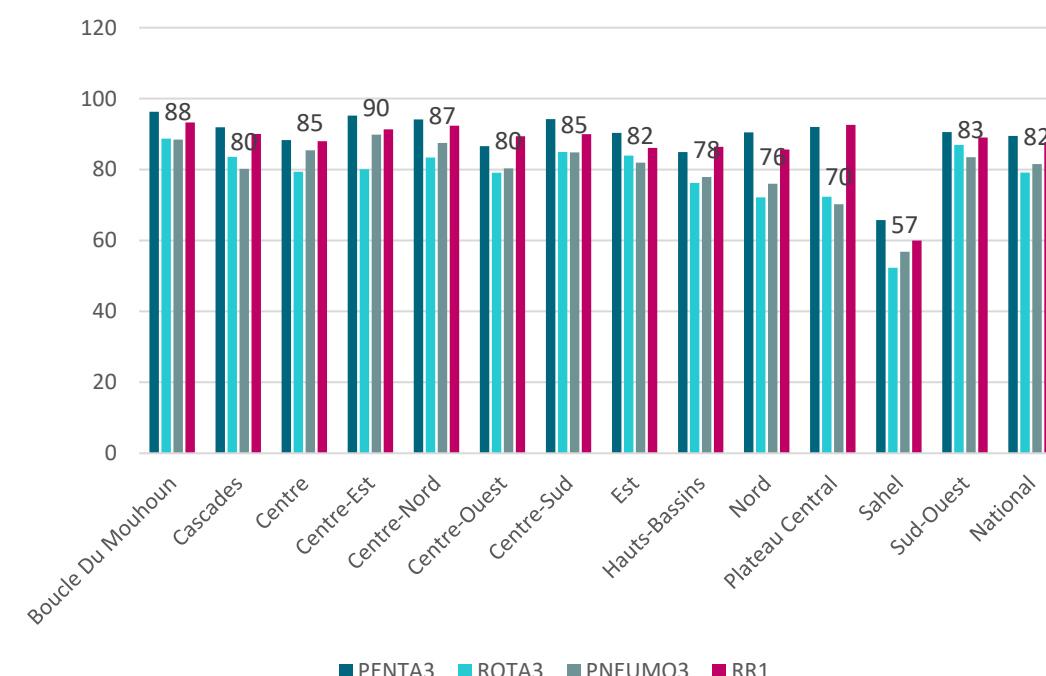
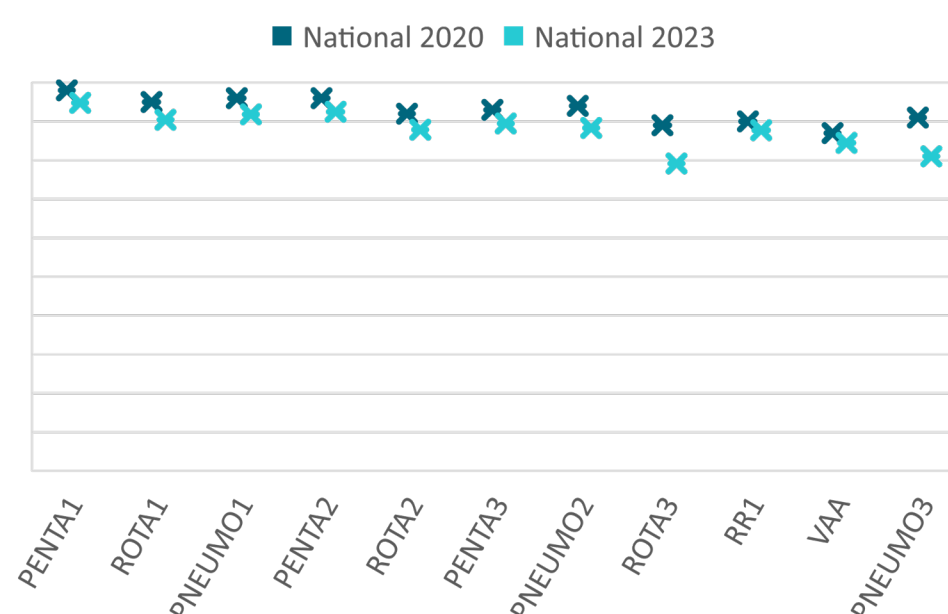


Fig5. Comparison of 2020 vs 2023 vaccine coverage of antigens given at the same time



- ❑ Among 3+0 eligible children, PCV13 dose 3 coverage was 82.5% (1107/1341); dose 3 median age was 4.8 months (interquartile range [IQR] 4.3, 6.6).
- ❑ Among 2+1 eligible children, dose 3 coverage was 80.8% (2165/2679); dose 3 median age was 9.1 months (IQR 5.3, 9.4).
- ❑ Dose 3 coverage in 2023 was not significantly different between 2+1 and 3+0 eligible children (P=0.099).

## CONCLUSION

- Survey results from 2023 show that Burkina Faso successfully implemented PCV13 vaccination schedule change without significantly impacting overall PCV13 dose 3 coverage.
- Decline in coverage from 2020 to 2023 may reflect other threats to the routine immunization program.

**Table 1 :** PCV13 coverage and median age among 3+0 and 2+1 eligible children aged 12-35 months, Burkina Faso, 2020, 2023

Indicator	2020 survey	2023 survey (3+0) eligible children	2023 survey (2+1) eligible children
Children screened	5294	1490	2962
Children with vaccine card	4894	1341	2679
PCV 13 dose 1 coverage	96.5% (96%, 97%) (4724/4894)	92.5% (91%, 94%) (1240/1341)	93.7% (93%, 95%) (2509/2679)
Median age for dose 1 (months)	2.2	2.3	2.3
PCV 13 dose 2 coverage	94.5 (94%, 95%) (4625/4894)	89.1% (87%, 91%) (1195/1341)	89.3% (88%, 90%) (2393/2679)
Median age for dose 2 (months)	3.4	3.7	4.3
PCV dose3 coverage	91.2% (90%, 92%) (4465/4894)	82.5% (80%, 84%) (1107/1341)	80.8% (78%, 81%) (2165/2679)
Median age of dose 3 (months)	4.5	4.8	9.1

## ACKNOWLEDGEMENTS

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## REFERENCES

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Abstract #770 Pneumococcal conjugate vaccine schedule change effect on routine childhood immunization coverage in Burkina Faso, 2022: a multi-phase household cluster survey.