

Infantile Vaccination Coverage in Brazil from 2016 – 2022: Effects of Pandemic Period in Non-COVID-19 Vaccination

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Introduction

- Vaccination is a key strategy to avoid preventable diseases, however, adequate vaccination coverage (VC) is needed to achieve a successful policy.
- Therefore, this real-world study aims to evaluate the VC among infants (0-12 months) in Brazil pre- and post-COVID-19, from 2016 and 2022.

Materials and Methods

- This is a descriptive analysis using real-world data from the Expanded Immunization Program System from Brazil (SI-PNI).
- We calculated from 2016 until 2022 the annual variation of VC for all vaccines available in Brazilian NIP for newborns until 12 months age (BCG, HBV, Rotavirus, Meningococcus C, Pentavalent, Pneumococcal, Polio, HAV and MMR) and described it by region of the country.

Results

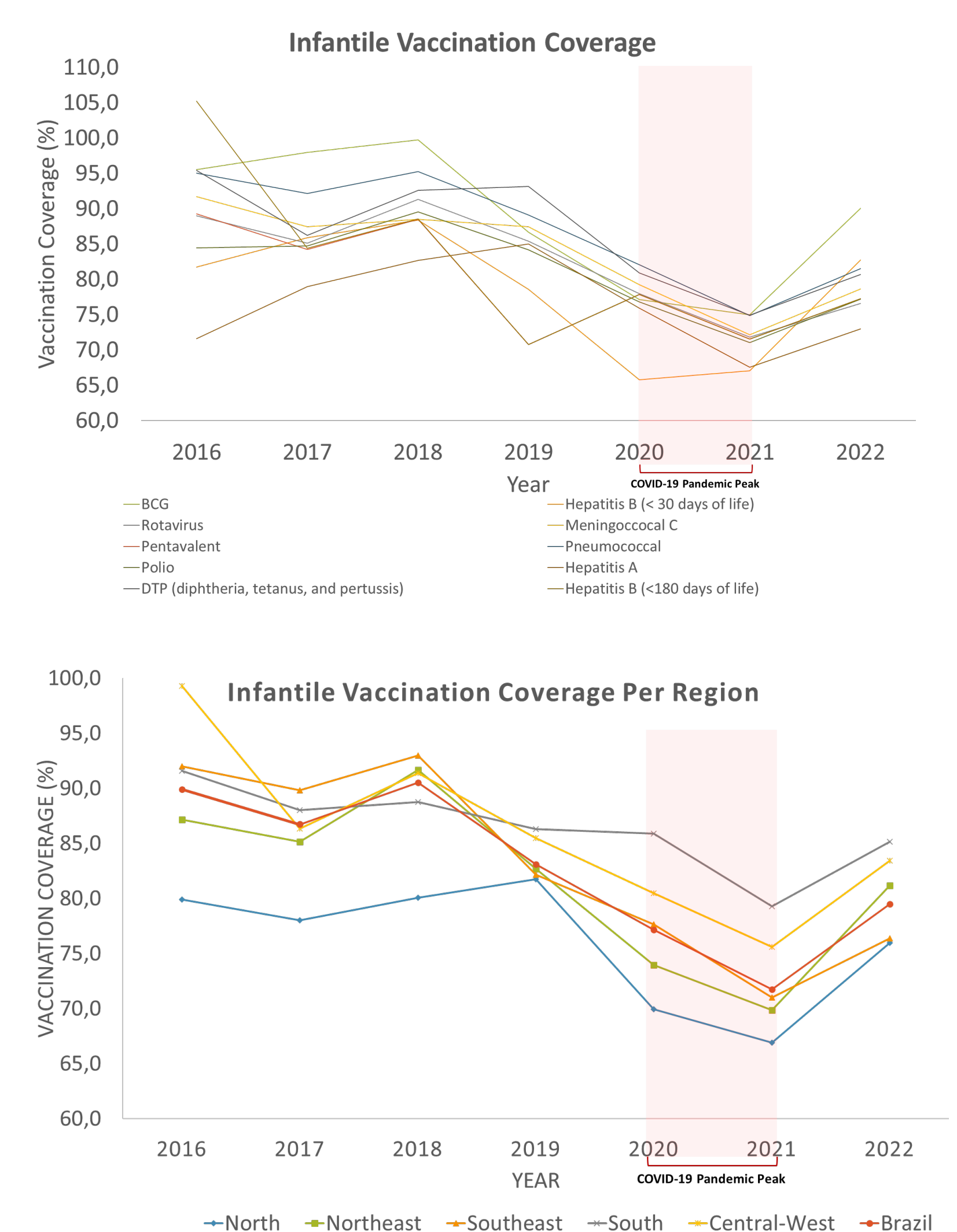
- The VC among all vaccines included in the analysis dropped from the period pre-COVID-19 until 2022.
- The overall average VC among the selected vaccines decreased from 89.9% in 2016 to 71.7% in 2021, followed by a recovery to 79.5% in 2022 (Figure 1 and Table 1).
- Regarding the geographic regions, the North region had the lowest VC in the whole period (76.1% VC); the Southeast region demonstrated the most discrete VC recovery in 2022, reaching 76.4%, compared to 92% in 2016.
- Overall, the most expressive impacts were observed in MMR and Pneumococcal-10 vaccination, which dropped from 95.4% and 95.0% in 2016 to 74.9 and 74.8% in 2021, respectively
- In 2022, MMR and Pneumococcal-10 VC reached 80.7% and 81.5%, respectively.

Table 1. Vaccination coverage by vaccine and region

Vaccine	Region	2016	2017	2018	2019	2020	2021	2022
BCG	North	92.1	92.4	95	91	81.2	80.7	96.6
	Northeast	94.3	97.3	100.4	85.4	74.8	75.1	97.5
	Southeast	95.4	102	102	84.4	73.4	71.2	83.3
	South	96.1	92.3	94.2	88.1	87.5	78.4	88.3
	Central-West	104.1	97.5	102.2	93.8	80.5	78.8	90.4
	Brazil	95.6	98	99.7	86.7	77.1	75	90.1
Hepatitis B (< 30 days of life)	North	72.7	82.3	87.5	86	74.2	75.7	87.5
	Northeast	79.4	86.1	92.6	80.5	70.3	72.1	89.3
	Southeast	85.5	89.7	88.9	73.6	57.9	60.5	76.2
	South	77.2	76.6	73.6	75.8	69	64.7	82.2
	Central-West	90.9	86.4	97.6	90.6	71.5	72.4	85.2
	Brazil	81.8	85.9	88.4	78.6	65.8	67	82.7
Rotavirus	North	77.8	73.8	79.2	80.5	68.5	63.9	70.1
	Northeast	85.8	81.9	92.1	84	74.7	69.2	75.9
	Southeast	91.5	88.7	93.7	85.6	78.7	71.8	75.3
	South	91.7	89.8	92.6	90.6	87.5	81.3	84.2
	Central-West	97.9	85.7	90.7	86.7	81.7	75.7	81.2
	Brazil	89	85.1	91.3	85.4	77.9	71.8	76.6
Meningococcal C	North	81.9	78.6	74.1	84.2	71.5	66.1	74.6
	Northeast	88.7	85.7	90.4	86.3	76.1	69.4	78.9
	Southeast	93.1	89.7	90.8	86.7	79.2	71.8	76
	South	94.5	92.1	88.7	93.4	89.2	81.5	85.6
	Central-West	103.1	86.9	89.5	88.9	83.7	76.2	83.8
	Brazil	91.7	87.4	88.5	87.4	79.2	72.2	78.6
Hepatitis B (<180 days of life)	North	92.1	72.8	71.3	70.3	64.1	62.3	71.6
	Northeast	96	81.5	89.5	71.4	70.1	69.5	78.9
	Southeast	111.3	88.5	92.4	69.1	83.2	71.8	74.8
	South	110.8	87.8	89.6	74.7	87.8	80.8	83.3
	Central-West	114.7	83.9	87.5	71.1	80.2	74.4	80.7
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Figure 1. Infantile Vaccination coverage in per immunization type and per country region



Conclusions

- The decreases of VC on infants in Brazil can lead into outbreaks of vaccine-preventable diseases, leading to clinical and economic burden to healthcare system already pressured by other demands
- Also, increasing in anti-vaccines and fake news movements are observed worldwide, therefore, educational, and geographic access strategies are essential tools to avoid the decrease of VC in the country, especially in regions hard to reach, such as North region

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