Reviewer 2

Dear Reviewer

Many thanks for your insightful comments and assistance with improving the manuscript.

Comment 1

There is a significant discrepancy in the reported Vaccine Usage Rates (VUR) between the Abstract and the Results section. In the Results section (Page 4, Table 1), the authors reported that Pfizer: PUBS VUR = 78.7%, PRIVS VUR = 104.4%; J&J: PUBS VUR = 64.7%, PRIVS VUR = 40.2%. However, the Abstract also states that "The analysis indicated a vaccine uptake rate (VUR) of 81.8% for Pfizer and 63.3% for the J&J C19V". The reader might be left confused about which values represent the true VUR.

Response

Vaccine usage rate as per WHO= Number of doses administered/Number of Doses Issued (WHO, 2005)

The analysis indicated that KZN Province recorded a total vaccine usage rate (VUR) of 81.8% for Pfizer and 63.3% for the J&J C19V. A deep analysis into this showed that Pfizer PUBS and PRIVS recorded a VUR of 78.7% and 104.4% respectively and J&J recorded a VUR of 64.7% for PUBS and 40.2% for PRIVS.

Updated under Results -Page 6 (yellow highlights)

Comment 2

The term "vaccine uptake rate" is often used interchangeably with "vaccine usage rate," which may not be a standard term and can contribute to confusion.

Response

Vaccine usage rate as per WHO= Number of doses administered/Number of doses issued (WHO, 2005)

Vaccine uptake rate is the number of people vaccinated with a certain dose of the vaccine in a certain time period, which can be expressed as an absolute number or as the proportion of a target population. (Rikitu Terefa et al., 2021)

**RIKITU TEREFA, D., SHAMA, A. T., FEYISA, B. R., EWUNETU DESISA, A., GETA, E. T., CHEGO CHEME, M. & TAMIRU EDOSA, A. 2021. COVID-19 Vaccine Uptake and Associated Factors Among Health Professionals in Ethiopia. Infect Drug Resist, 14, 5531–5541.

**WHO 2005. Monitoring Vaccine Wastage at Country Level May 2005 ed (Page 2)

Updated under definitions – Page 2 (yellow highlights)

Comment 3

Several VUR values exceed 100% (e.g., Pfizer PRIVS = 104.4%, J&J PRIVS = 208% in August 2021). The authors correctly note this is due to non-reporting of issued doses, but this should be explicitly highlighted in the Abstract and Results to avoid misinterpretation.

Response

The analysis revealed that Pfizer PUBS and PRIVS both exhibited higher VUR in comparison to J&J. Notably, Pfizer PRIVS VUR exceeded 100% due to non-reporting and non-recording of issued doses. This underscores the necessity for integrated electronic, real-time monitoring of VURs in current and future vaccination programs

PRIVS reported VUR>er 100% (n=1-29) indicating that doses administered exceeded issue doses and reflecting non reporting of issued doses on SVS and suboptimal monitoring processes. (yellow highlights)

Updated under abstract, results and discussion.

Comment 4

The qualitative sample is relatively small (n=19 total respondents). While informative, caution should be exercised in generalizing these perspectives.

Response

We acknowledge that the qualitative sample is small, but the aim was to gain rich, in-depth perspectives. KZN is a resource constrained Province in South Africa with a mix of rural and urban health Districts and facilities. While these results may not be applicable to all populations, meaningful, diverse insights can be derived from vaccination managers in KZN; and can inform practice and guide future studies and immunisation programmes; particularly in low resourced environments**.**

Updated under limitations (yellow highlights)