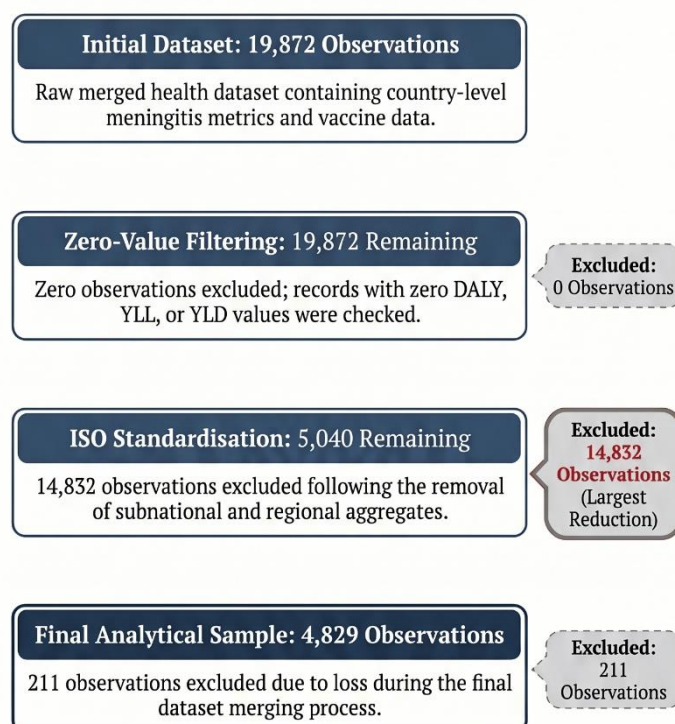


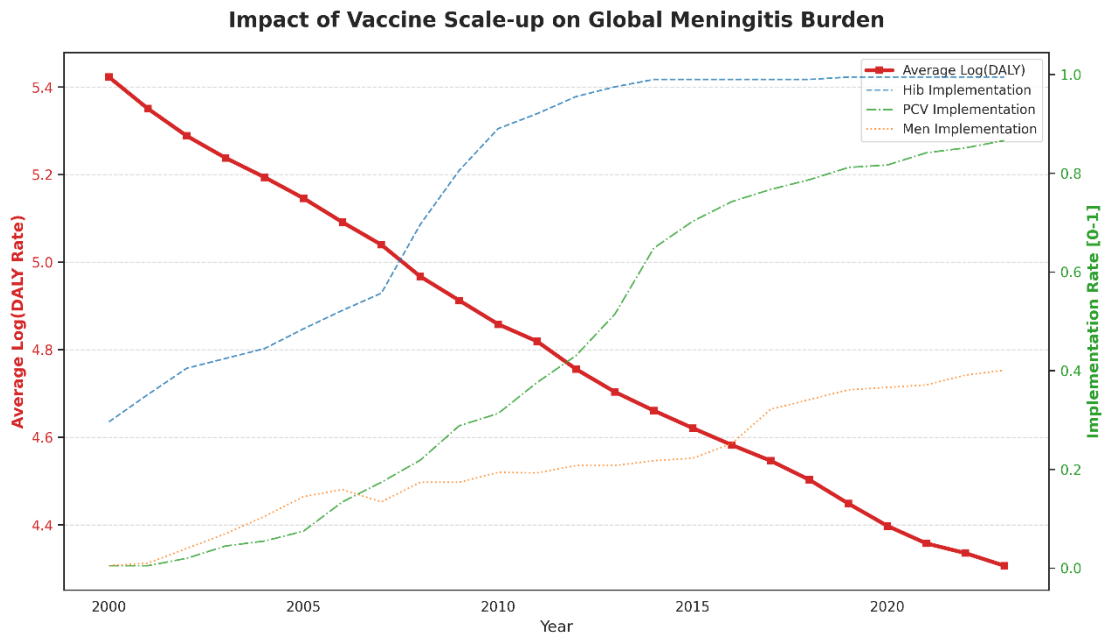
1 **Figure**
2 **Figure 1. Data processing and sample attrition flowchart.** The flowchart illustrates
3 the systematic exclusion criteria used to derive the final analytical sample of 4,829
4 country-year observations. The initial dataset of 19,872 records was refined through
5 quality control and geographic standardization. The largest reduction (n=14,832)
6 resulted from the exclusion of subnational regions and supra-national aggregates to
7 ensure analysis at the sovereign level only. A further 211 observations were lost
8 during the final relational merging between health metrics and vaccine
9 implementation data.



10

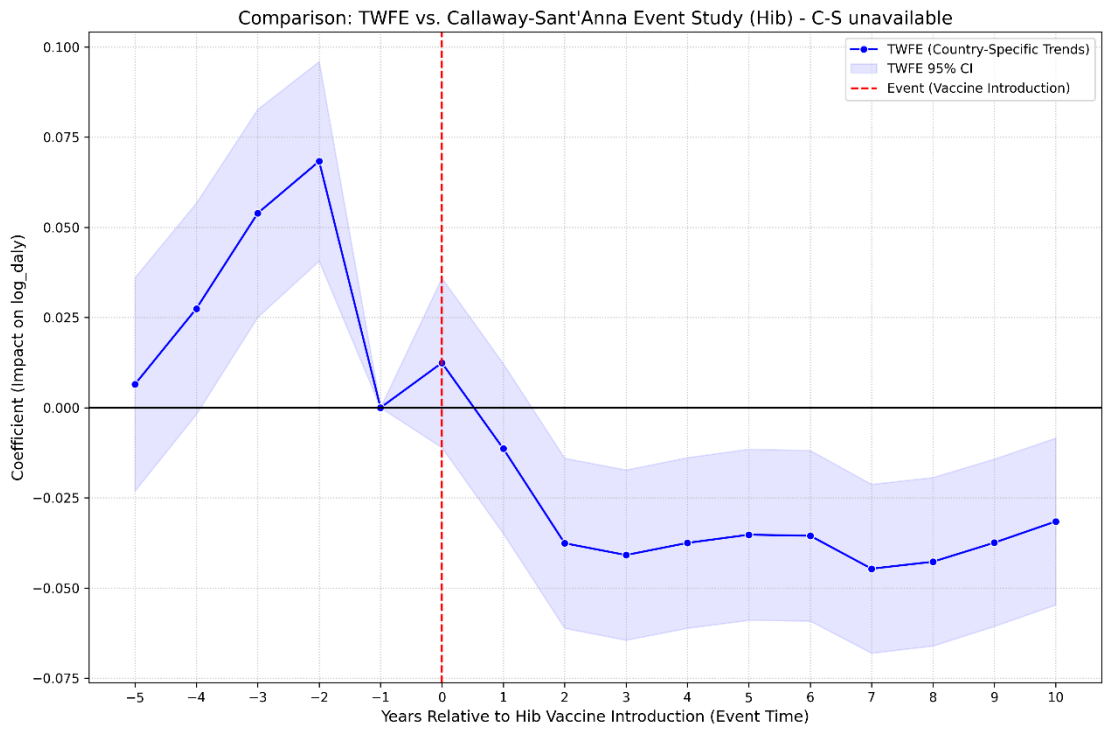
11

12 **Figure 2. Global trends in meningitis DALY rates and vaccine scale-up, 2000–**
13 **2023.** Temporal trends in log-transformed meningitis DALY rates across all countries
14 from 2000 to 2023. The solid line represents the mean global DALY trajectory, with
15 shaded areas indicating variability across countries (if applicable). Vertical reference
16 markers (if shown) indicate approximate periods of widespread introduction of Hib,
17 pneumococcal conjugate, and meningococcal vaccines.



20 **Figure 3. Event-study of Hib vaccine introduction impact on log DALY rates.**

21 Coefficients are estimated from an event-study specification incorporating country
22 and year fixed effects with country-specific linear time trends. Event time is defined
23 relative to the year of Hib vaccine introduction, with the year prior to introduction
24 (event time = -1) used as the reference category. Shaded regions represent 95%
25 confidence intervals, and the vertical dashed line indicates vaccine
26 introduction



29 **Figure 4. Estimated association between vaccine introduction and meningitis**
30 **DALY rates globally and in the African meningitis belt.** Comparison of regression
31 coefficients for vaccine introduction from two-way fixed effects models. Estimates
32 are shown for global analyses and for the African meningitis belt subgroup. Error bars
33 represent 95% confidence intervals. Negative coefficients indicate reductions in
34 DALY rates following vaccine introduction.

