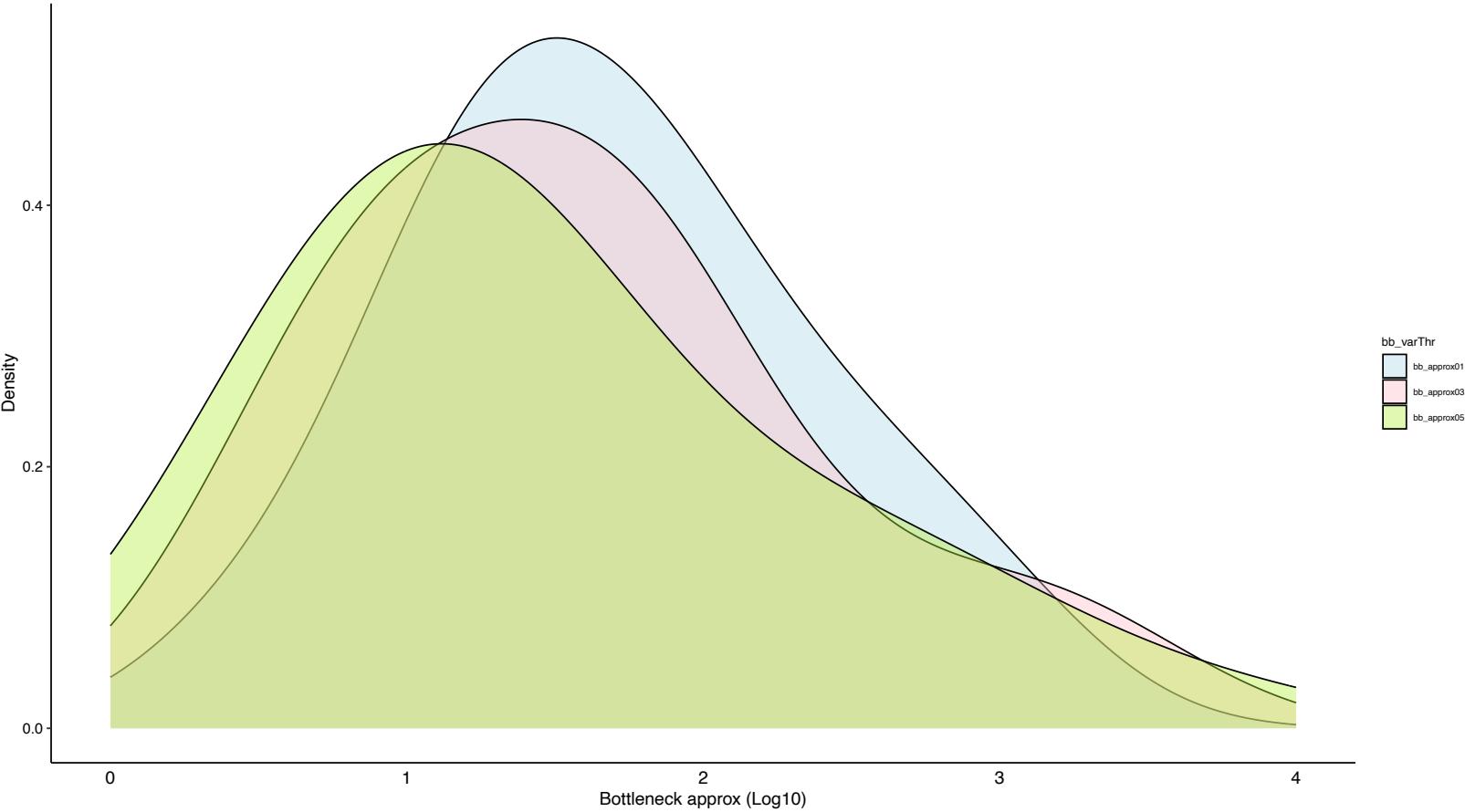
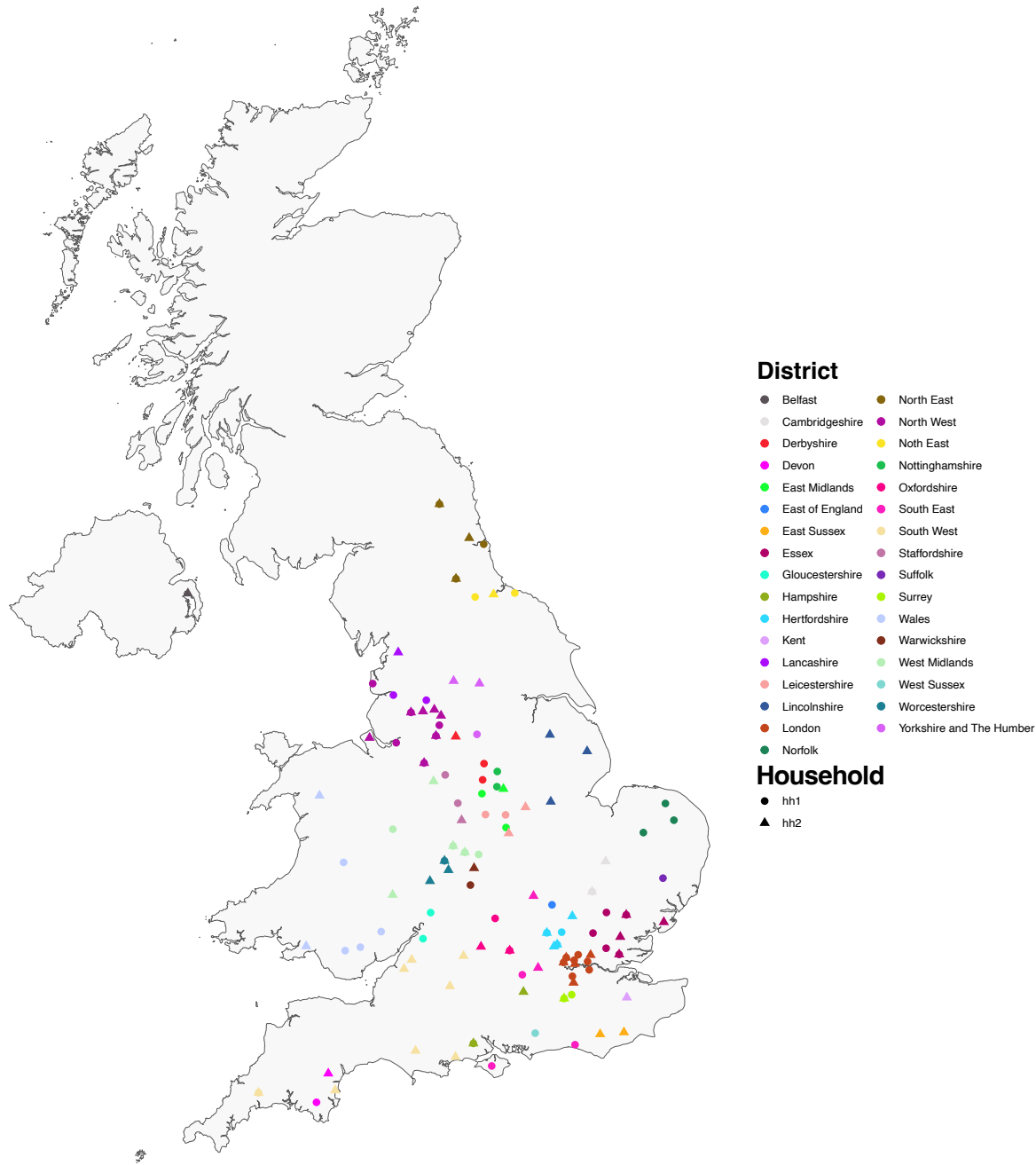


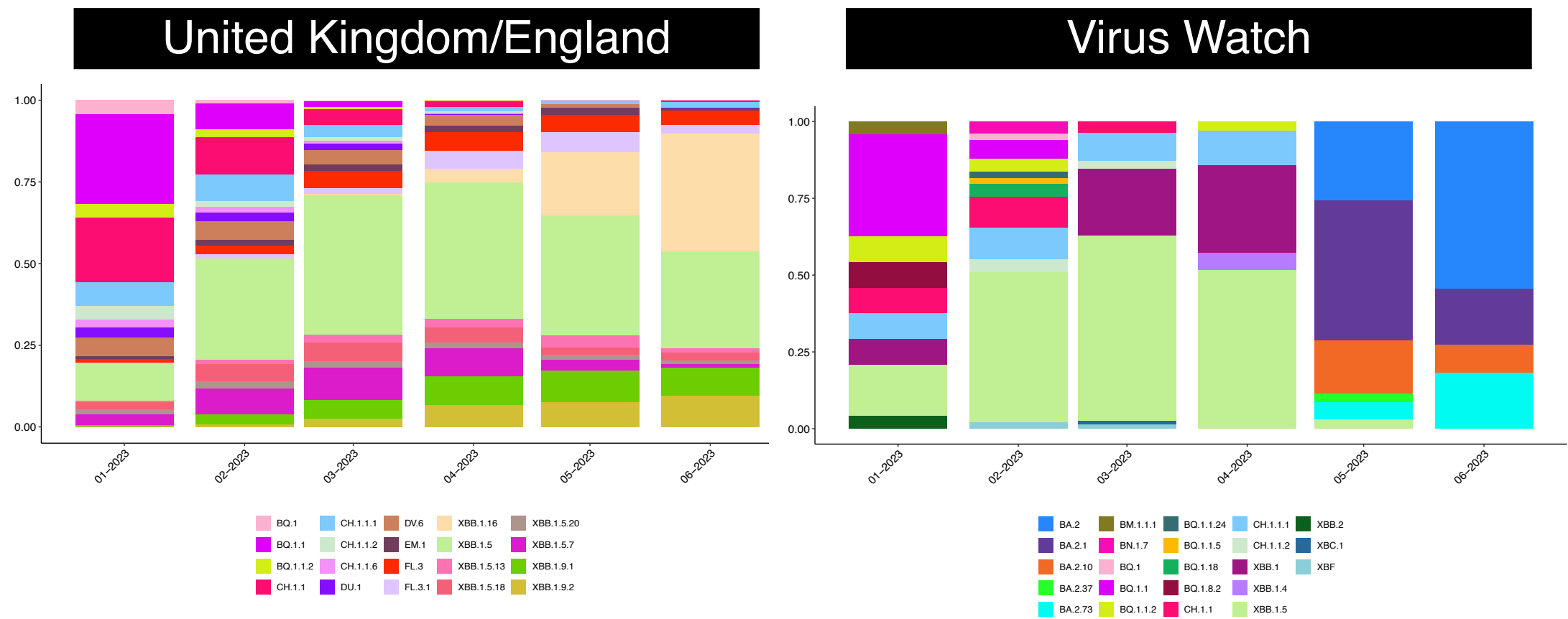
Supplementary Figure 1. Density plot of the estimated bottleneck size (as population size, N_b) with Koelle approximate binomial model (X-axis, Log10) using 1% (light blue), 3% (light pink) and 5% (light green) thresholds.



Supplementary Figure 2. Household distribution in the UK. Different colors represent various districts/regions. Dots represent households with one positive participant while triangles represent households with more than one positive participant.

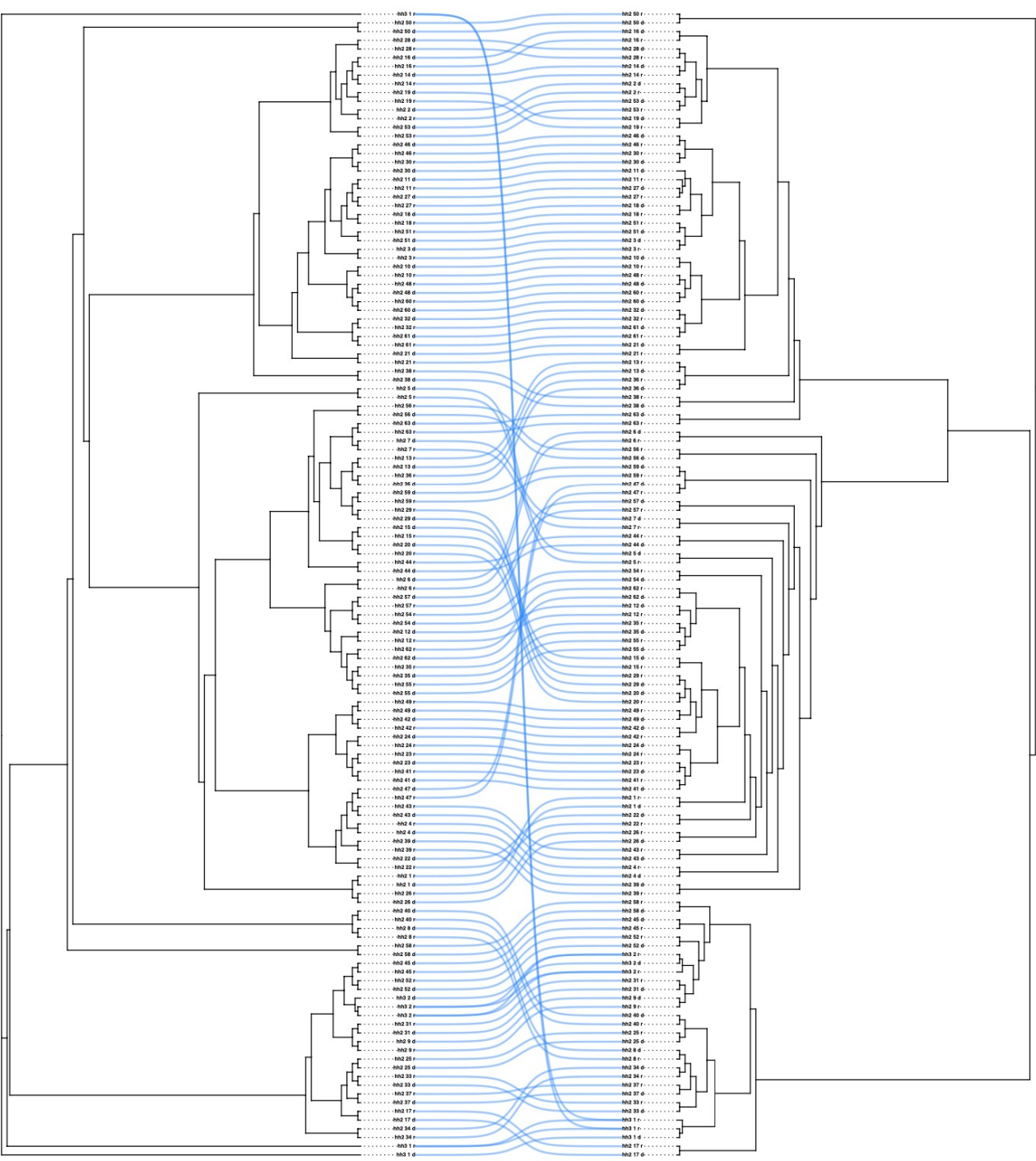


Supplementary Figure 3. Lineages distribution in UK vs genomic Virus Watch cohort.



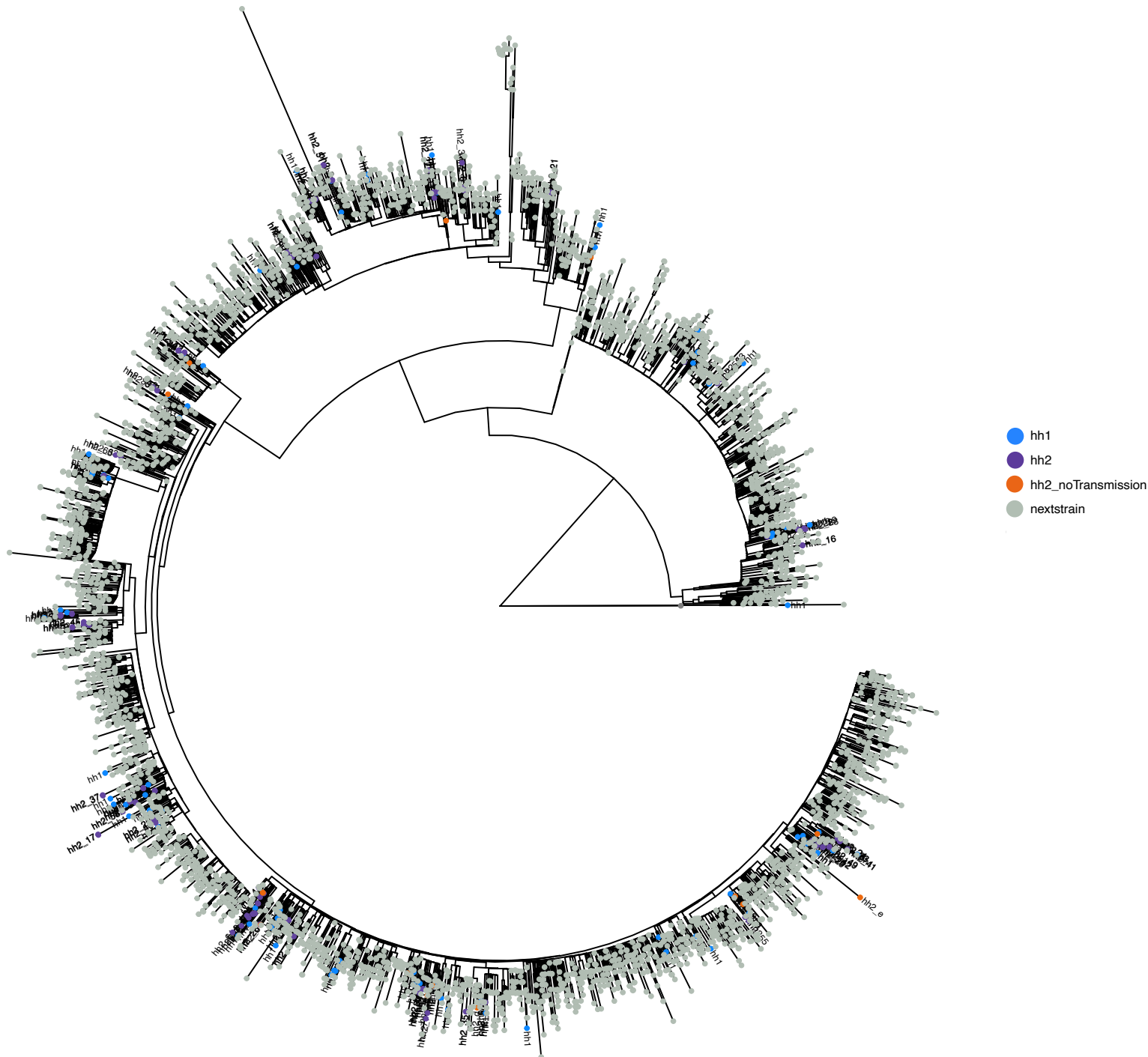
Supplementary Figure 4. Tangleogram highlighting the correspondence between within-host and consensus positive participants.

Within-host

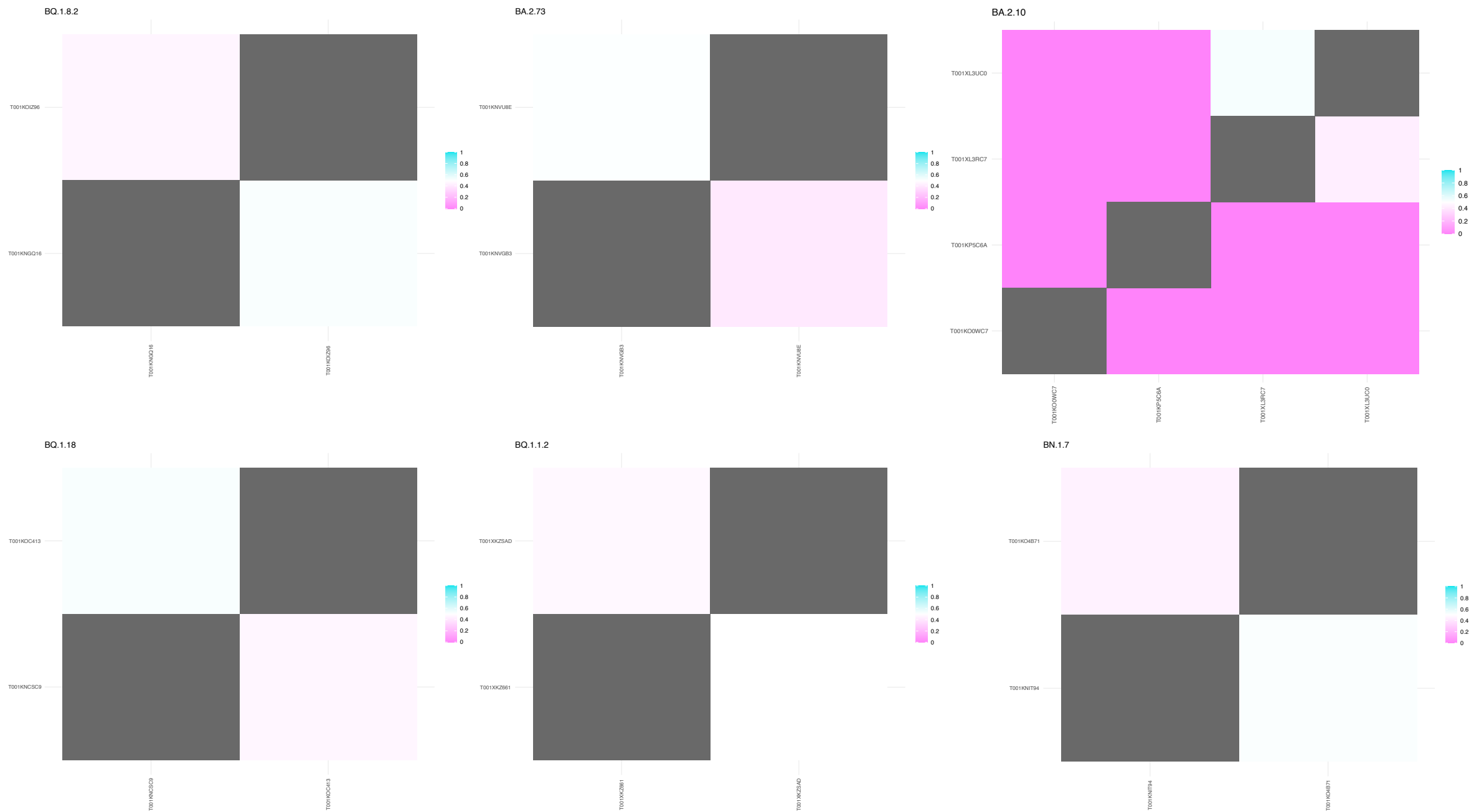


Consensus

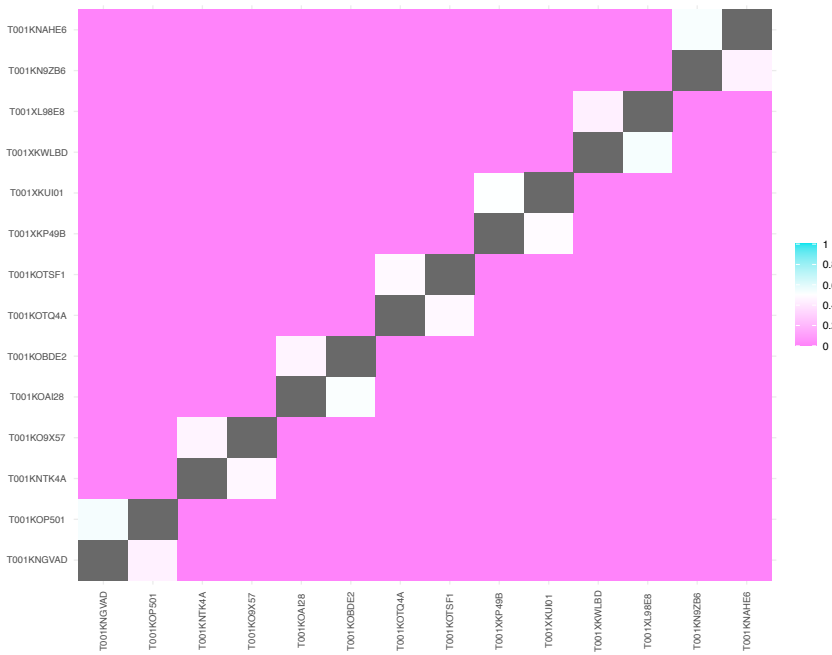
Supplementary Figure 5. Maximum likelihood phylogenetic tree generated using 4219 high coverage consensus sequence together with the genomic Virus Watch cohort. Turquoise dots indicate households (HH) with only one individual positive, purple dots refer to HH with more than one participant positive, orange dots highlight HH with no direct transmission, and in gray are the Nexstrain consensus sequences.



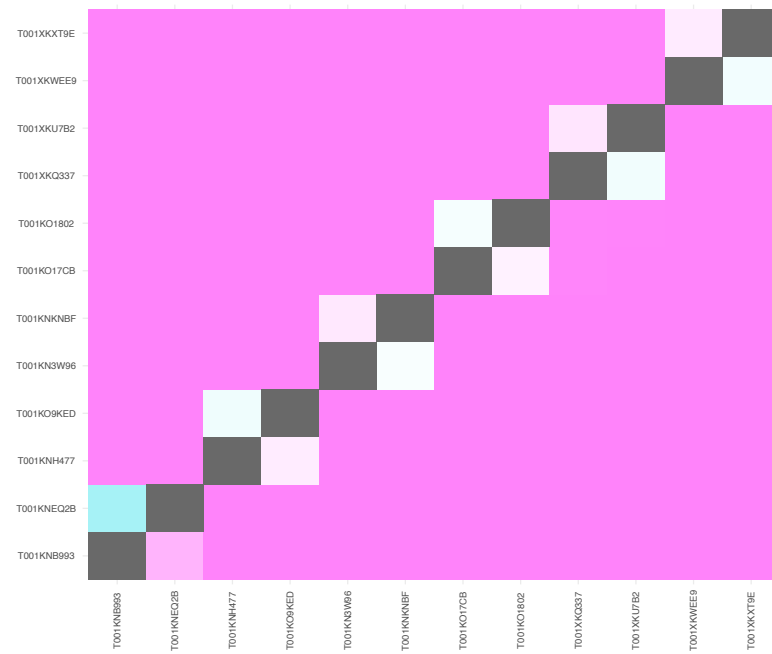
Supplementary Figure 6. Posterior probability of direct transmission for all households with more than one positive participant. Y axis represent infectors (who infected whom) and x axis infectees (individuals who were infected). Data plotted per lineage.



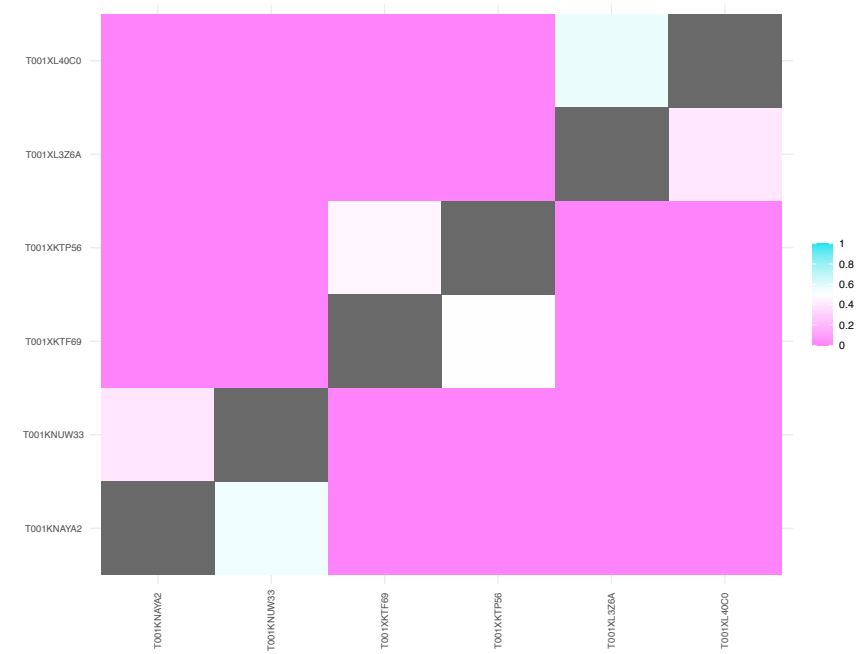
BA.2.1



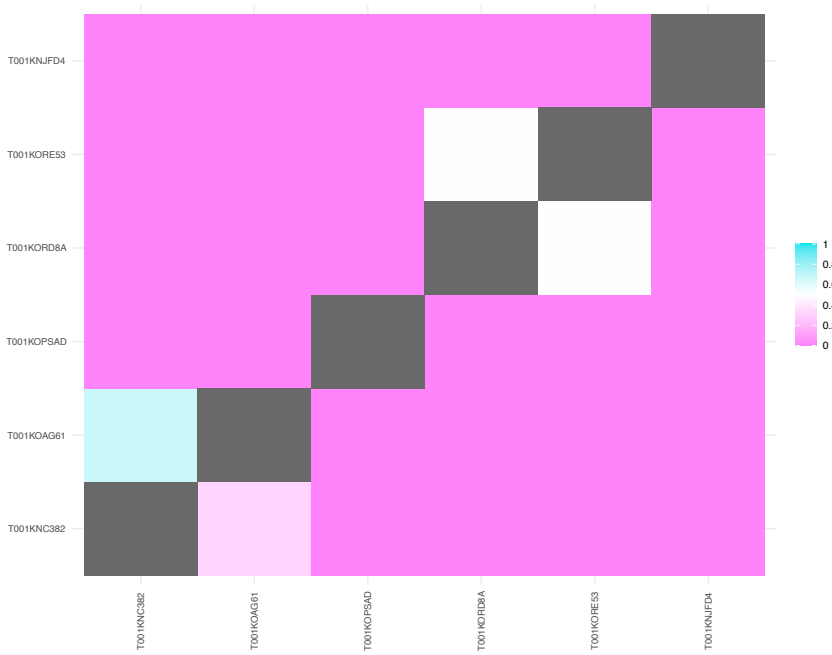
CH.1.1.1



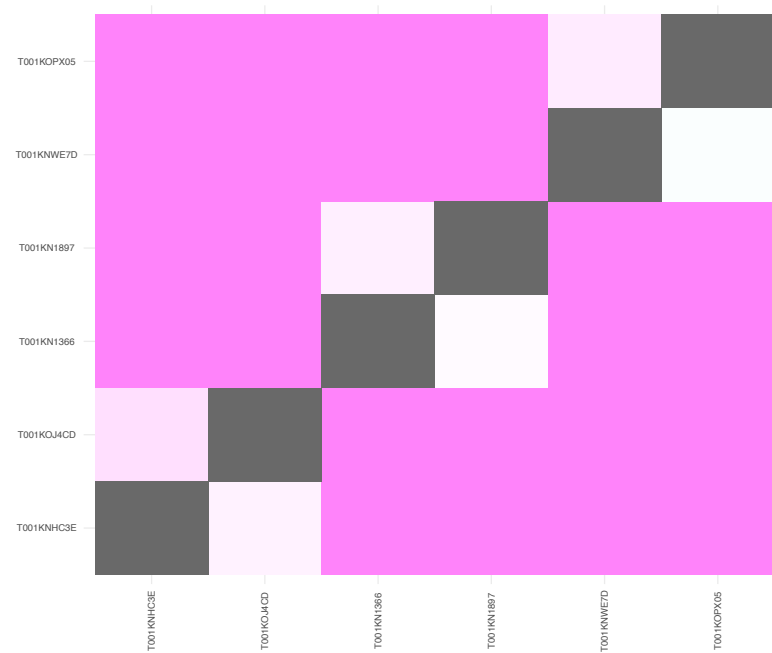
CH.1.1



BA.2



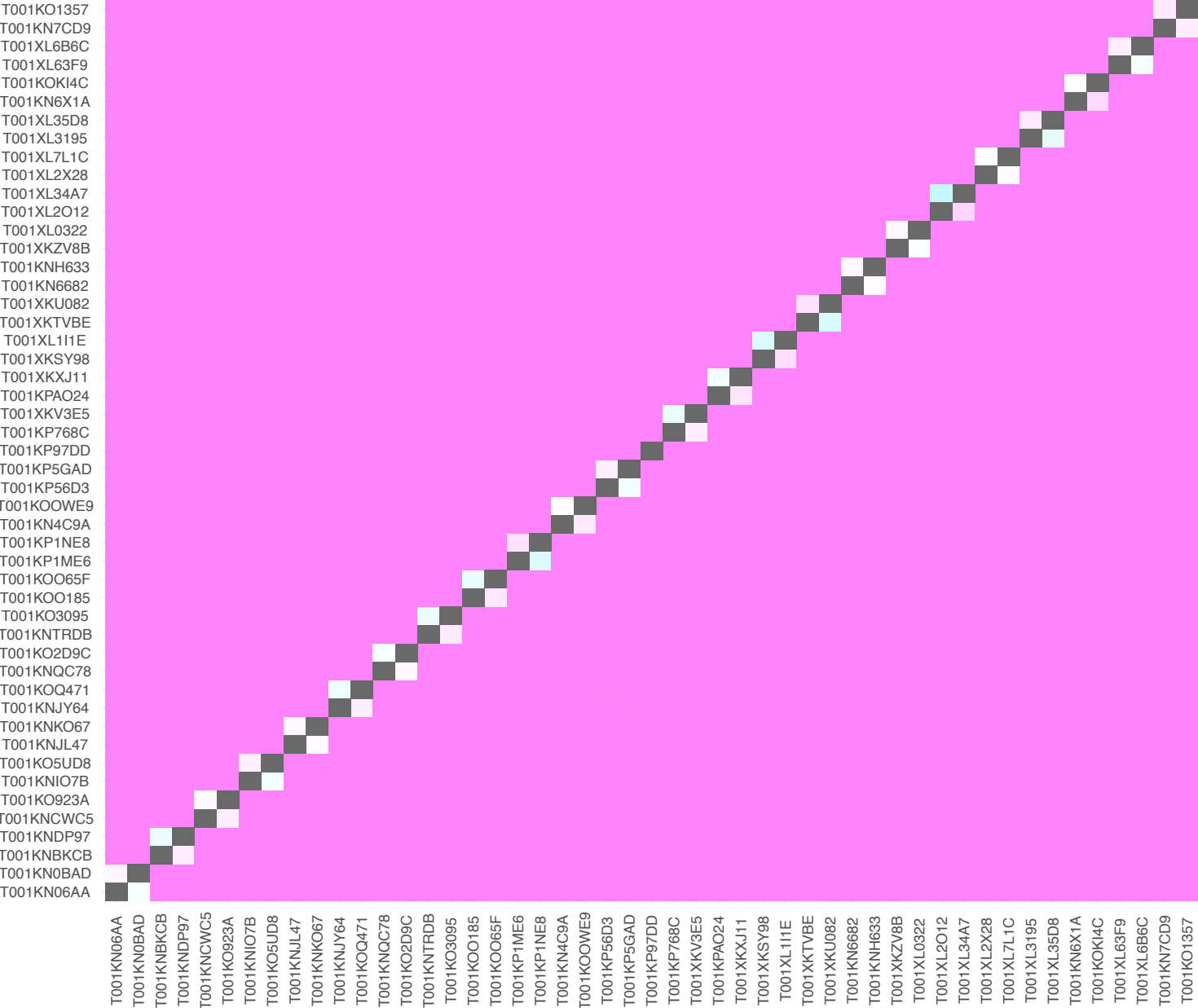
BQ.1.1



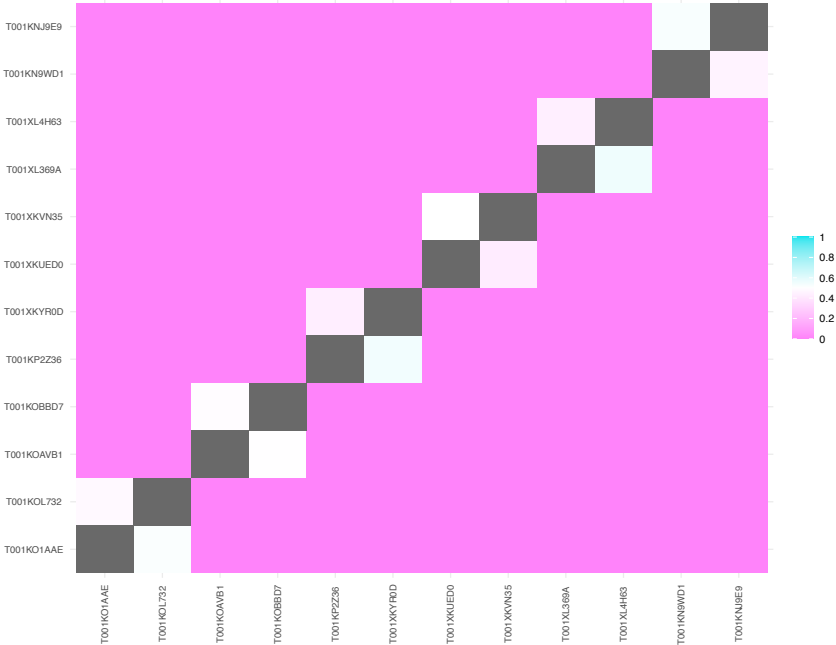
CH.1.1.2



XBB.1.5



XBB.1

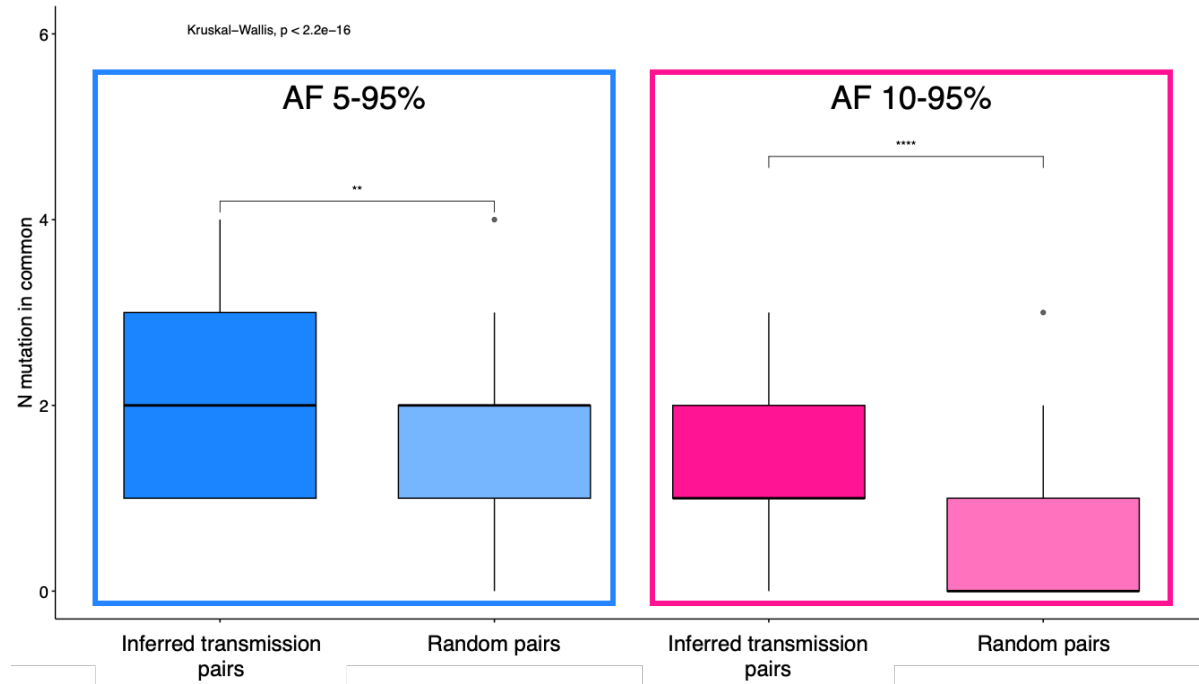


XBB.1.4



Supplementary Figure 7. Total number of shared variants: inferred transmission pairs vs random pairs. Allele frequency (AF) considered were 5-95% in blue and 10-95% in pink. a) random pairs are shuffled from households with only one positive participant; b) random pairs are shuffled from the inferred transmission pairs.

a



b

