**Description of categorization of broad and split antigens**

HLA antigen classifications have evolved over time as assay development has allowed the detection of differences in antigens (“split” categories) that were previously undistinguishable (“broad” categories). Our study included 21 groups of antigens that were affected by broad categories splitting over time.

For broad-split groups where the broad antigen was very rare, we excluded the broad antigen and analyzed each child antigen as their own category.

A9 Broad (Splits A23 and A24)

A10 Broad (Splits A25, A26, A34, and A66)

A19 Broad (Splits A29, A30, A31, A32, A33, and A74)

B5 Broad (Splits B51 and B52)

B12 Broad (Splits B44 and B45)

B15 Broad (Splits B62, B63, and B75)

B16 Broad (Splits B38 and B39)

B17 Broad (Splits B57 and B58)

B21 Broad (Splits B49 and B50)

B22 Broad (Splits B55 and B56)

B40 Broad (Splits B60 and B61)

When one or more split antigens were very rare, we combined the splits with the broad antigen for each group to aggregate the data for analysis.

A28 Broad (Splits A68 and A69)

B14 Broad (Splits B64 and B65)

B70 Broad (Splits B71 and B72)

C3 Broad (Splits C9 and C10)

There were 6 antigen groups where there appeared to be gradual phase out of the broad categories and phase in of the split categories over time. For these groups, we examined the prevalence trends over time. We excluded the broad categories from analysis, and included the split categories for transplants occurring on or after the year at which there was at least two-thirds (67%) of the phase in of the split category had been achieved.

DR2 Broad (Splits DR15 and DR16; 1995)

DR5 Broad (Splits DR11 and DR12; 1991)

DR6 Broad (Splits DR13 and DR14; 1995)

DR3 Broad (Splits DR17 and DR18; 1995)

DQ1 Broad (Splits DQ5 and DQ6; 1995)

DQ3 Broad (Splits DQ7, DQ8, and DQ9; 1995)