

Figure S1 Decline in HI Titer After Vaccination

Geometric mean titers were determined for the second blood draw for each of the binned groups in both the 2003 and 2011 cohorts. The titers are expressed as a percentage of the geometric mean titers from the first blood draw for the same subjects in each binned group. There are 16 men and 16 women in the 3-4 month bin, 24 of each in the 5-7 month bin, 32 of each in the 8-10 month bin, and 16 of each in the 11-12 month bin. The antigens tested with the 2003 cohort were A/New Caledonia/20/1999 (H1N1), A/Moscow/10/1999 (H3N2) and B/Hong Kong/330/2001 (Victoria lineage). The antigens tested with the 2011 cohort were A/California/07/2009 (pdmH1N1), A/Perth/16/2009 (H3N2) and B/Brisbane/60/2008 (Victoria lineage). The values for each time point for men and women are not statistically different (Mann Whitney test).

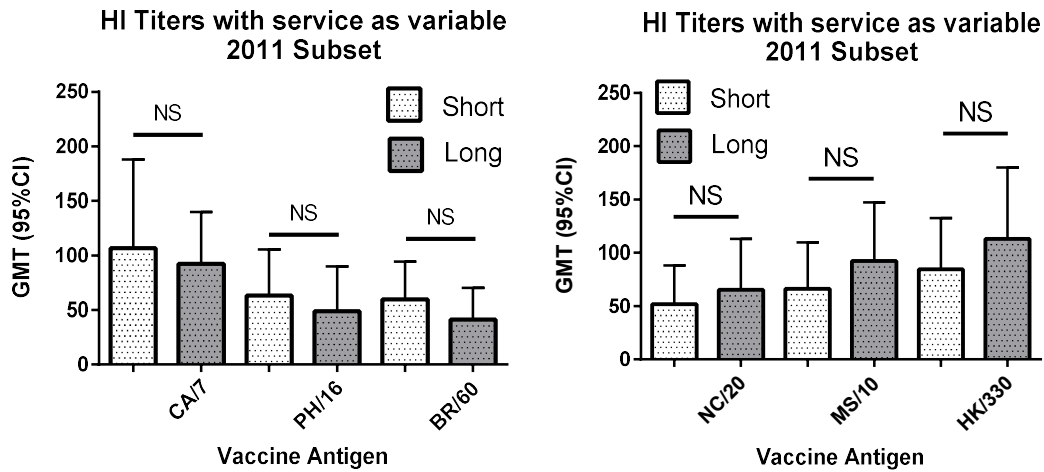


Figure S2 Titrers from Short and Long Service Subgroups

The geometric mean titers (with 95% confidence interval) for sera from personnel with short and long service are shown. The data are from 12 men and 12 women with 8-9 years of service, and 12 of each with 1-3 years of service. The viruses used for testing HI titer are listed on the x axis. Those matching the vaccine antigens are CA/7, A/California/07/2009 (pdmH1N1); PH/16, A/Perth/16/2009 (H3N2); and BR/60, B/Brisbane/60/2008 (Victoria lineage). Those matching antigens that circulated earlier in the subject's lifetime are NC/20, A/New Caledonia/20/1999 (H1N1); MS/10, A/Moscow/10/1999 (H3N2); and HK/330, B/Hong Kong/330/2001 (Victoria lineage). The difference between the short and long service groups was evaluated using the Mann Whitney rank test. n.s., not significant.

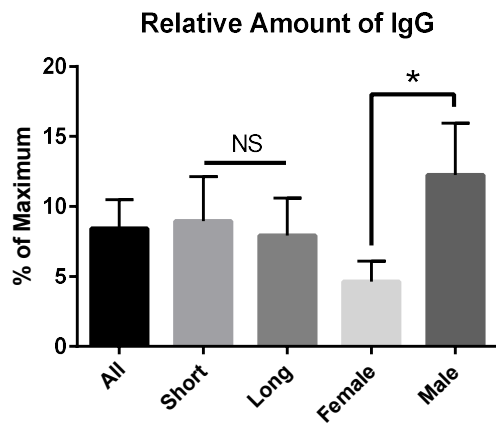


Figure S3 Amount of IgG from Short and Long Service Subgroups

The amount of IgG for 24 samples from the 2011 cohort (12 short service and 12 long service subjects) were determined as a percentage of a high IgG concentration serum sample. Bars show the mean with the standard error for all samples and subgroups. The significance of the difference between the service groups and between the sexes was evaluated using the Mann Whitney rank test: n.s., not significant; \*,  $p < 0.05$ .

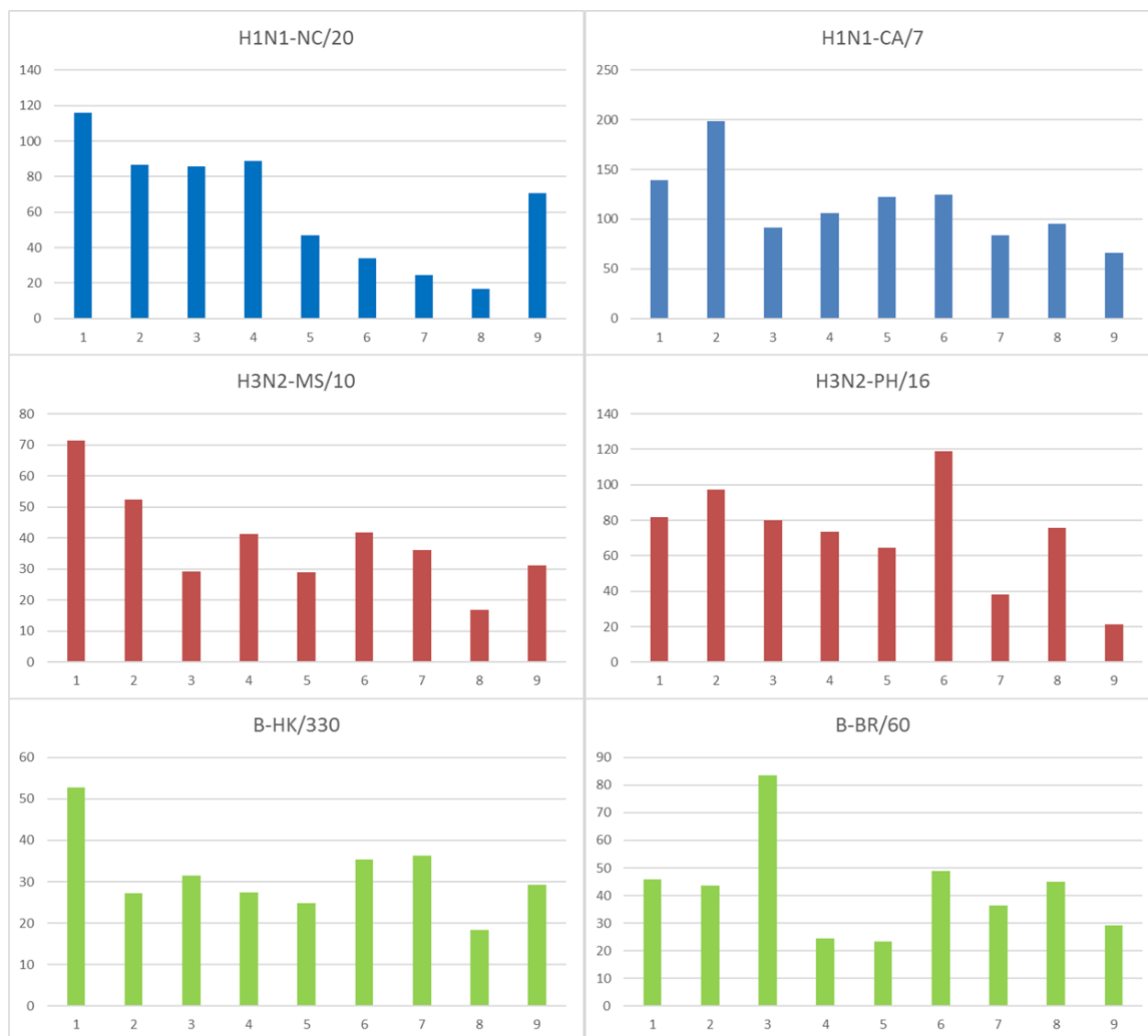


Figure S4 HI Titers with Years of Service

The geometric mean titers were calculated according to the number of years in service for both the 2003 and 2011 cohorts. The viruses used for testing HI titer are A/New Caledonia/20/1999 (H1N1), A/Moscow/10/1999 (H3N2), and B/Hong Kong/330/2001 (Victoria lineage) for the 2003 cohort. The viruses used for testing HI titer are A/California/07/2009 (pdmH1N1), A/Perth/16/2009 (H3N2), and B/Brisbane/60/2008 (Victoria lineage) for the 2011 cohort.

### HI Titers to A/New Caledonia/20/199 (H1N1)

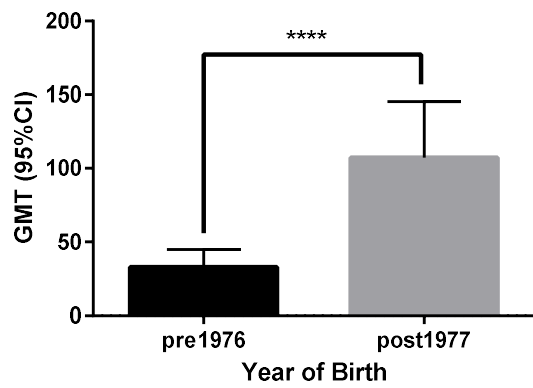


Figure S5. HI Titers for subjects born after the emergence of the H1N1 strain

The geometric mean titers (with confidence interval) for the 2003 cohort based on birth year. The difference between the two groups was evaluated using the Mann Whitney rank test. \*\*\*\*,  $p < 0.0001$ .

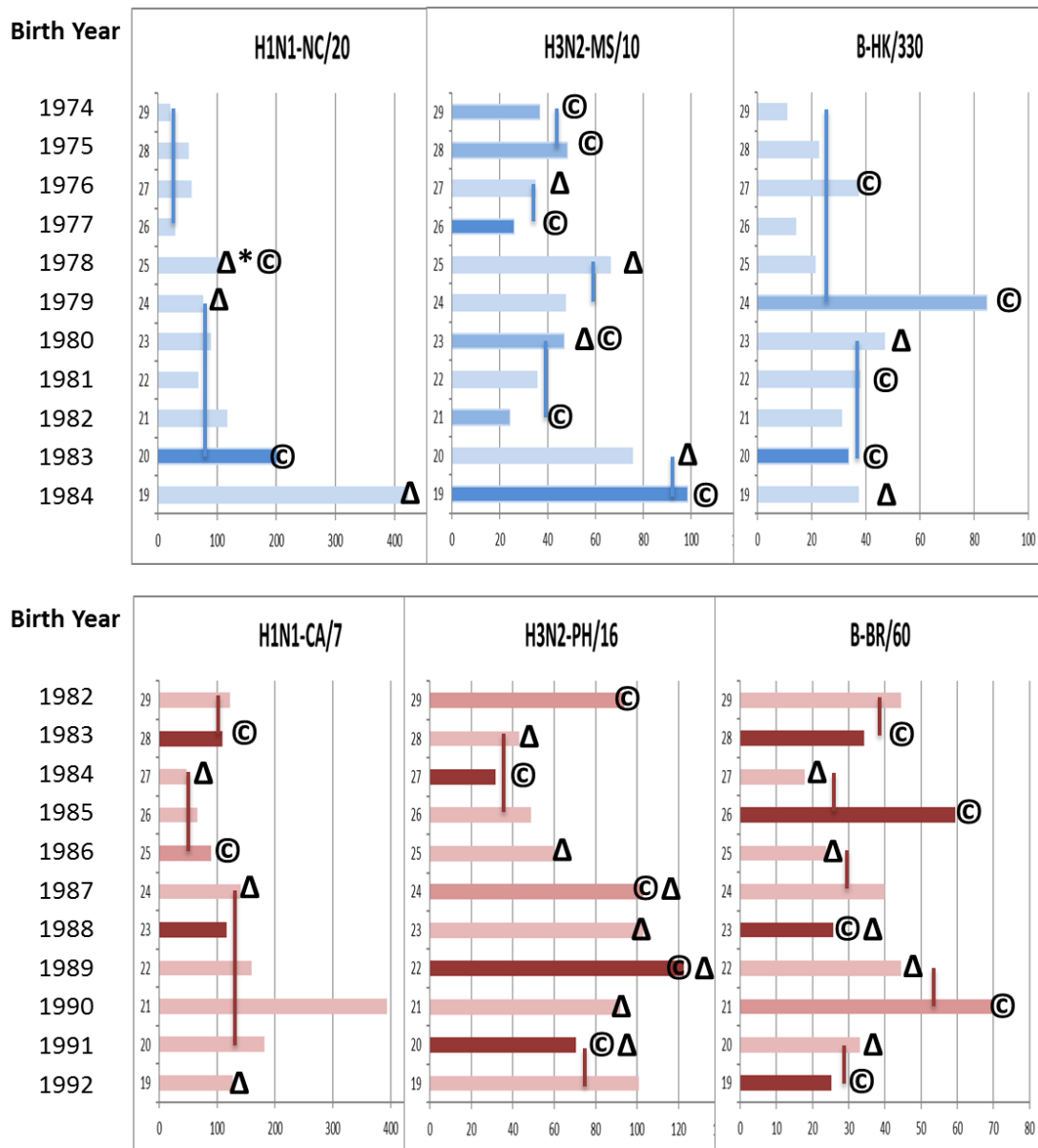


Figure S6. HI Titers for Different Birth Cohorts

The geometric mean titers for the 19-29 year old subjects in each cohort are shown as horizontal bars. The year of birth and age at vaccination are shown on the y axis. The viruses used for testing HI titer are: NC/20, A/New Caledonia/20/1999 (H1N1); MS/10, A/Moscow/10/1999 (H3N2); HK/330, B/Hong Kong/330/2001 (Victoria lineage); CA/7, A/California/07/2009 (pdmH1N1); PH/16, A/Perth/16/2009 (H3N2); and BR/60, B/Brisbane/60/2008 (Victoria lineage). © indicates that the dominant type of virus that circulated the season following the birth year. Vertical bars indicate the geometric mean titer toward the vaccine antigen for all of the years that the circulating virus of that type was antigenically similar (as determined by antigen recommended for vaccine formulation in birth year). Δ indicates a change in the virus strain recommended for vaccines for the birth year (see Figure 5 for statistical analysis). Darker shading of the horizontal bars indicates a more severe influenza season.