

HPV VACCINE UPTAKE AMONG FIRST NATIONS PEOPLE IN MANITOBA, CANADA

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Background

According to the 2006 Canadian census there were 698,000 First Nations (FNs) people in Canada, 14.4% of which lived in Manitoba. Despite improvements in cervical cancer screening rates in FNs women in Canada, they still have higher cervical cancer rates than non-First Nations (NFNs) women. High uptake of the HPV vaccine in FNs would provide another opportunity to reduce this disparity. In Canada, Gardasil was approved for females aged 9-26 years and has been available privately in Manitoba since August, 2006 for a fee of approximately \$400 (Can). A free school-based vaccination program for girls in Grade 6 was started by the provincial health department in September, 2008.

Objectives

To describe the uptake of Gardasil in Manitoba's FNs relative to NFNs from September, 2006 to December, 2009 in both the private and public settings.

Methods

Design

A population-based cohort study utilizing federal and provincial (Manitoba) databases.

Data

The federal Indian Registry System, which identifies all status FNs people in Canada, was linked by Manitoba Health to the Manitoba Population Registry (MPR), in order to identify FNs and NFNs people. The MPR, with the FNs flag, was provided to the investigators by Manitoba Health with no personal identifiers other than a scrambled unique Personal Health Identification Number (PHIN). Using the scrambled PHIN, the MPR was linked to the Manitoba HPV Vaccine Registry, which contains information on all people vaccinated in Manitoba since September, 2006.

Analyses

Age-specific and age-standardized private vaccination rates were calculated. The vaccination rate in the private setting was determined for 11 year olds, who are the predominant age group entering Grade 6. The age at vaccination was calculated from date of first vaccination. The analyses were stratified by urban/rural residence and by income quintile at the place of residence. The latter were based on the 2006 Canadian census. Due to small numbers, income quintiles were aggregated into two categories: 1 and 2 (lower income) and 3-5 (higher income).

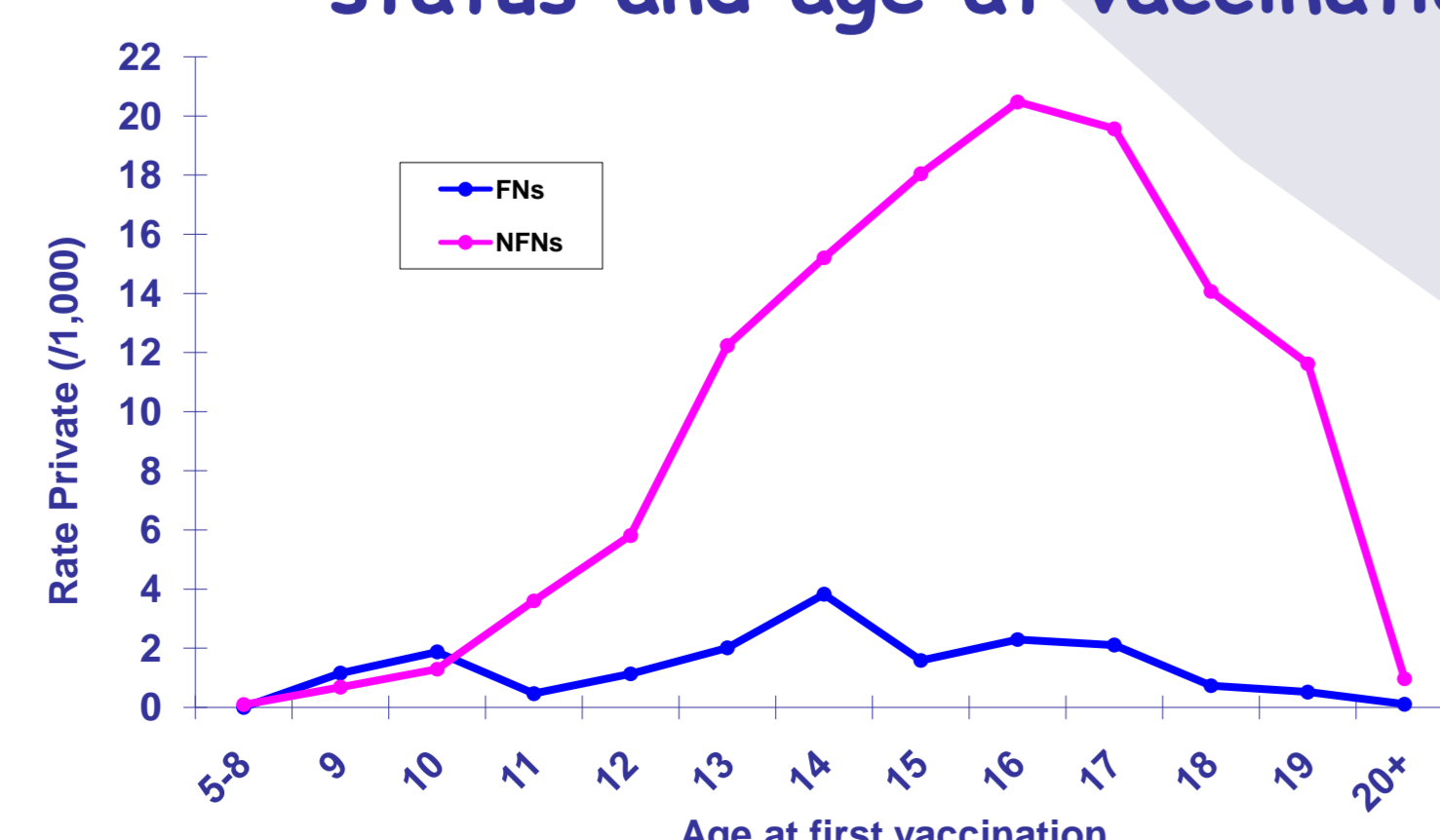
Results

Of the 1,428 FN females vaccinated by December 2009, 6.2% received the vaccine privately compared to 36.8% of the 11,053 vaccinated NFN females.

Total and age-specific rates

In the private setting, the average annual age-standardized vaccination rate was approximately eight times higher in the NFNs (261.3 / 100,000) than in the FNs (31.2 / 100,000). With the exception of females less than 10 years of age, NFNs had higher rates than the FNs at all ages (Figure 1).

Fig. 1 Average annual private first dose vaccination rates (/1000) by FN status and age at vaccination



In the first year of the school-based public program, 39.6% of FNs girls aged 11 years had been vaccinated, compared to 46.5% of NFNs girls 11 years of age.

Rural/Urban residence and income quintile at place of residence

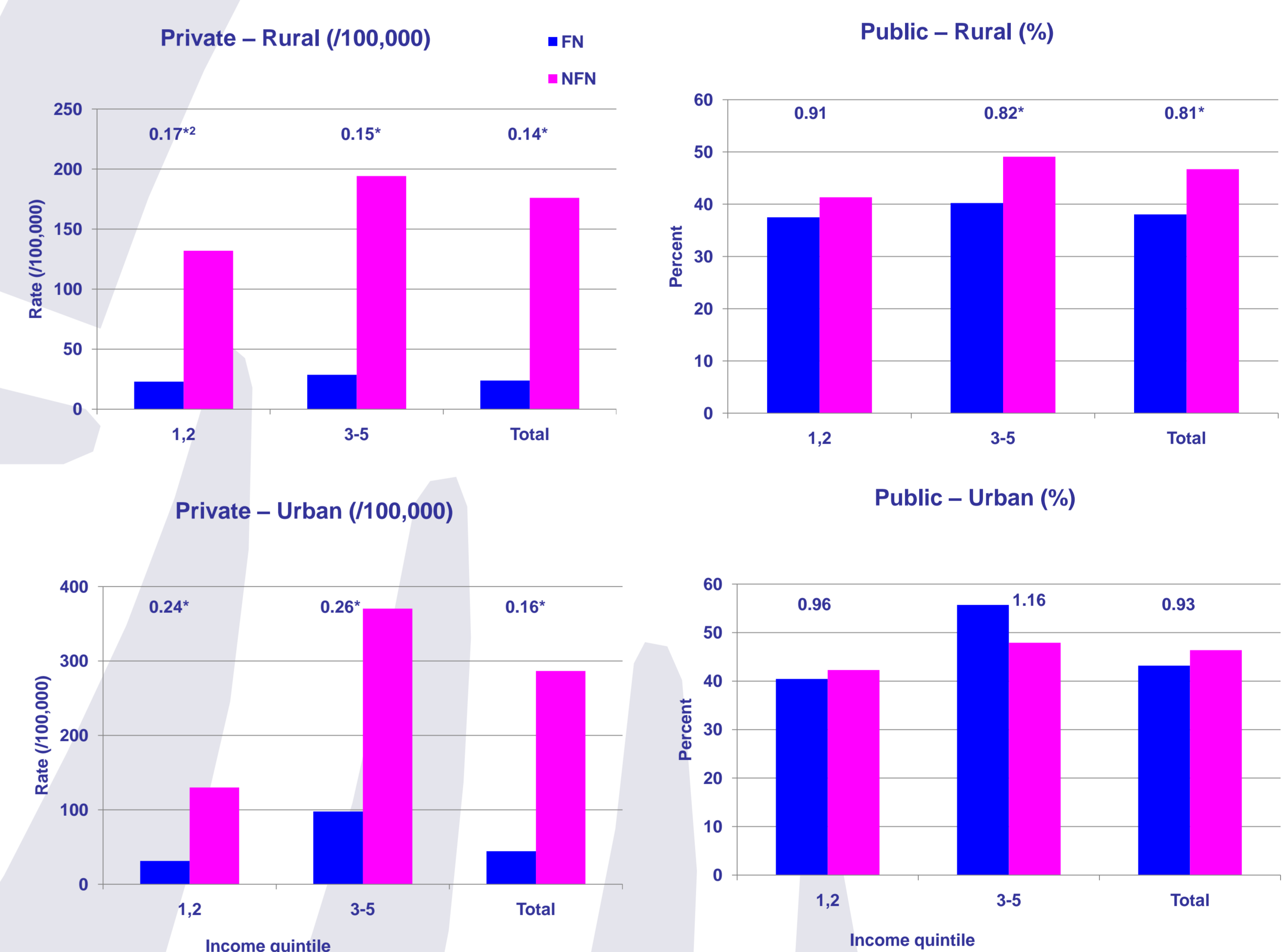
In both the private and public setting the overall vaccination rates for rural FNs were significantly lower than those for NFNs (Fig. 2). For urban residents the overall vaccination rate for FNs was only significantly lower than the FNs in the private setting.

For both rural and urban FNs and NFNs, and for private and public vaccinations, the uptake was greater in the higher income quintile group.

The private vaccination rate was lower in FNs than NFNs for all residence and income categories.

In the public setting there were no significant differences between urban FNs and NFNs. However, although the differential decreased compared to the private setting, the percent vaccinated remained significantly lower for FNs than NFNs in rural areas with the higher income quintiles.

Figure 2. Vaccination rates and rate ratios (FN/NFN) by vaccination source, place of residence, income quintile and FN status¹



1. * - p < 0.05 2. FN / NFN rate ratios

Number of vaccinations - public program

For girls vaccinated in the first year of the school program (2008-09), 74.5% of FNs and 93.8% of NFNs completed the vaccination schedule of three doses by April 2010. The average number of doses was 2.66 for FNs and 2.92 for NFNs.

Discussion / Conclusion

In the private setting, FNs had significantly lower vaccination rates than the NFNs. The cost of the vaccine appears to be an issue for both FNs and NFNs, as both rural and urban residents who lived in low income areas had lower private vaccination rates than those living in the higher income areas.

In the free school-based public setting the vaccination differential between FNs and NFNs, although smaller compared to the private setting, was still present in rural areas with higher income quintiles.

Given the generally lower vaccination rates and vaccine schedule completion rates in the FNs relative to the NFNs, the existing differential in cervical cancer rates is likely to continue.