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Effectiveness of a school- and primary care-based HPV vaccination intervention (the PrevHPV study)

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Background: HPV vaccine coverage (VC) remains lower than expected in many countries, particularly France. We developed and evaluated the PrevHPV multicomponent intervention to

improve HPV VC among French adolescents. The components were 'education and motivation' of adolescents in schools, 'at-school vaccination', and 'general practitioners' (GPs) training'. We evaluated the effectiveness of the intervention two months after it ended.

Methods: We carried out a pragmatic cluster randomized controlled trial with incomplete factorial design in 14/25 French school districts (July 2021-April 2022). The cluster was the municipality (n = 91). The outcome was HPV VC (≥ 1 dose) two months after the intervention ended among 11-14-year-olds living in participating municipalities (data from the French national reimbursement database and from the trial). We performed two types of analyses: (1) without considering the dose of intervention received, using a linear model with one fixed effect per component, adjusted for baseline HPV VC; (2) a post hoc on-treatment analysis, rerunning the linear model by replacing the fixed effects with a quantitative 'dose of intervention' variable calculated for each component using data collected during the trial.

Results: For the three intervention components, estimates of the effect on VC at two months were greater for the on-treatment analyses than for the analysis that did not consider the intervention dose. For the 'at-school vaccination' component, the estimate increased from 5.50 percentage points (pp; $p < 0.001$) to 11.25 pp ($p < 0.001$). The 'GPs' training' component reached significance (from -1.46 pp, $p = 0.150$ to 3.56 pp, $p = 0.049$). In both types of analyses, no significant effect was observed for 'education and motivation' (from -0.08 pp, $p = 0.950$ to 2.58 pp, $p = 0.241$).

Conclusions: Increasing HPV VC among adolescents requires the involvement of various stakeholders and could be achieved by combining interventions in both schools and primary care settings.

Key messages:

- The PrevHPV study is supported by the French health authorities and conducted by a multidisciplinary consortium to tackle a long-lasting public health concern in France.
- Offering free HPV vaccination at school significantly increased HPV VC; providing GPs with training and a decision-aid tool helped increase HPV VC if the GPs completed the training.