

# The impact of policy support for HIV Pre-exposure prophylaxis use on the number of new HIV diagnoses among men who have sex with men: an interrupted time series analysis

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## Background

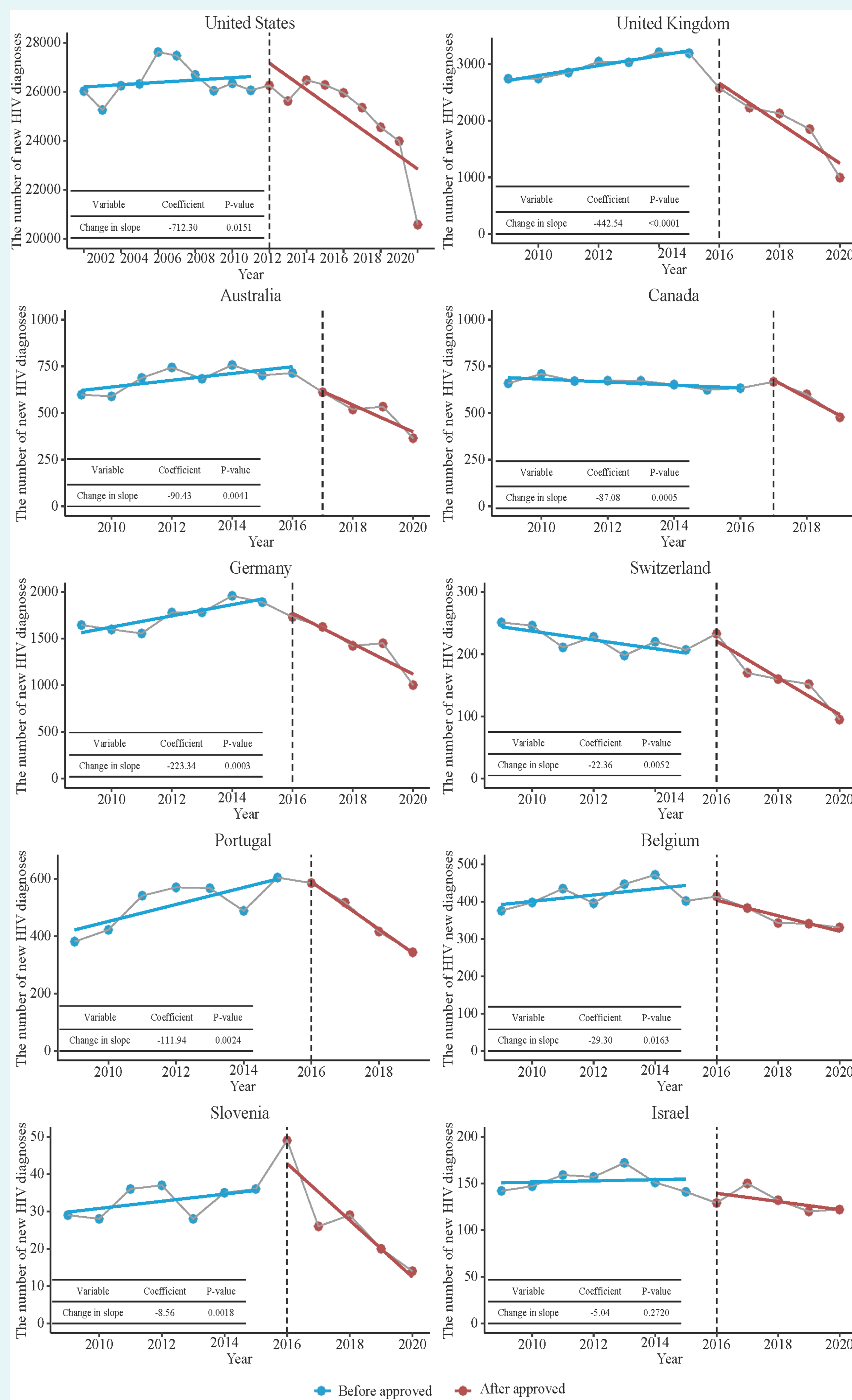
Pre-exposure prophylaxis (PrEP) has been shown to effectively reduce the risk of HIV transmission among men who have sex with men (MSM) at an individual level in randomized controlled trials. However, few studies have investigated the impact of policy support for PrEP use on the number of new HIV diagnoses among MSM at a population level as more countries and regions approve the use of PrEP.

## Methods

- National surveillance data on the number of new HIV diagnoses among MSM by year were collected from countries and regions which had approved the use of PrEP by April 2022.
- Interrupted time series (ITS) analyses were performed to evaluate the effects of approval of PrEP use on the number of new HIV diagnoses among MSM per year, with the model coefficient representing the difference in the number of new diagnoses between the "Before approval" and "After approval" periods, and a p-value <0.05 representing a significant reduction in the number.
- The Durbin-Watson test was used to examine the presence of first order auto-correlation.

## Results

- The ITS analyses were conducted using data from ten eligible countries (Figure), which provided sufficient data on the number of new HIV diagnoses among MSM each year.
- Significant decreasing trends for the number of new HIV diagnoses among MSM per year were observed after the approval of PrEP use in the United States, United Kingdom, Australia, Canada, Germany, Switzerland, Portugal, Belgium, Slovenia (*all P*<0.05).
- Although Israel showed a decreasing trend after PrEP use approval, the change in trend was not statistically significant (*P*>0.05).



**Figure. Interrupted time series analyses for evaluating the effect of approval of HIV Pre-exposure prophylaxis use on the number of new HIV diagnoses among men who have sex with men**

## Conclusion

Our findings support the positive effect of policy support for PrEP use on reducing the number of new HIV diagnoses among MSM, underscoring the importance for all countries and regions to approve the use of PrEP.

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