

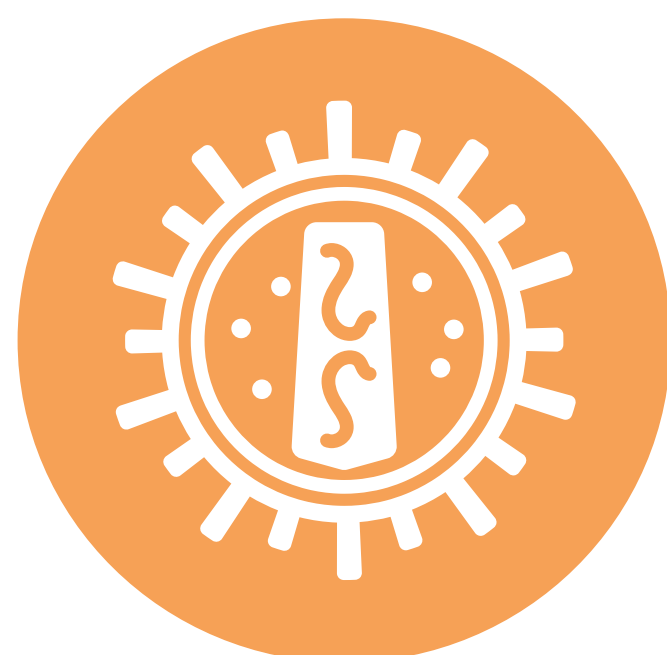
# Intersection of HIV, Biological Considerations, and Comorbidities in Women Living With HIV: Impact of Online Independent Medical Education on Physician Knowledge and Confidence

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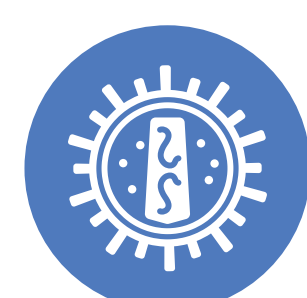
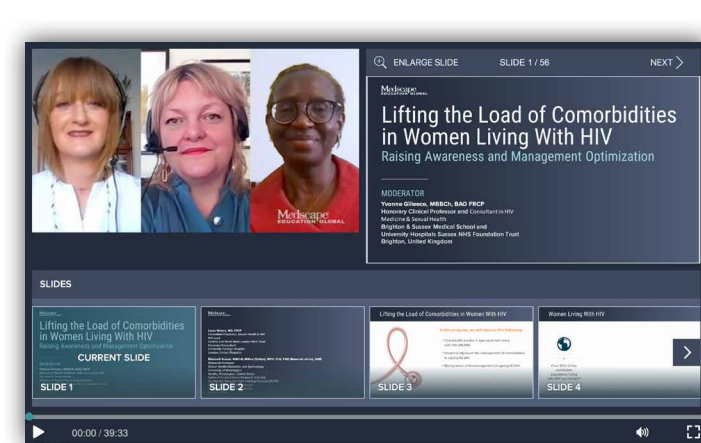
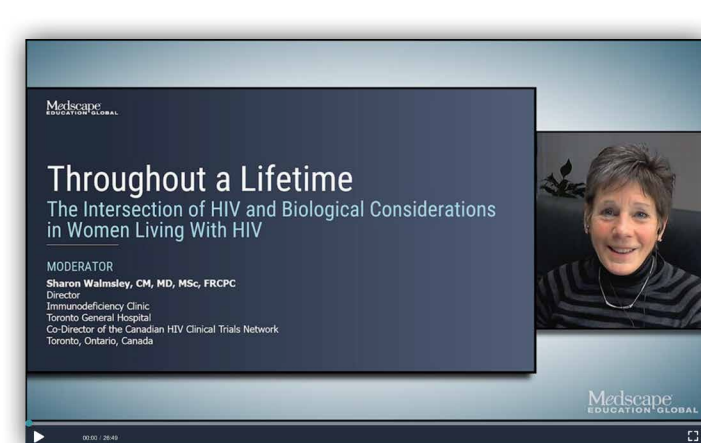
## BACKGROUND

Women living with HIV face unique gender specific challenges through different life stages such as pregnancy, menopause, and aging. Furthermore, there are virological, immunological, social, behavioural, and societal differences in women living with HIV compared with men living with HIV and HIV-negative women. We assessed the impact of 2 online independent medical education activities on the knowledge and confidence of HIV and infectious disease (ID) physicians regarding aspects of living with HIV that are unique to women and women-specific HIV-associated comorbidities.

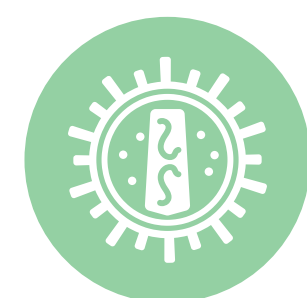


## METHODS

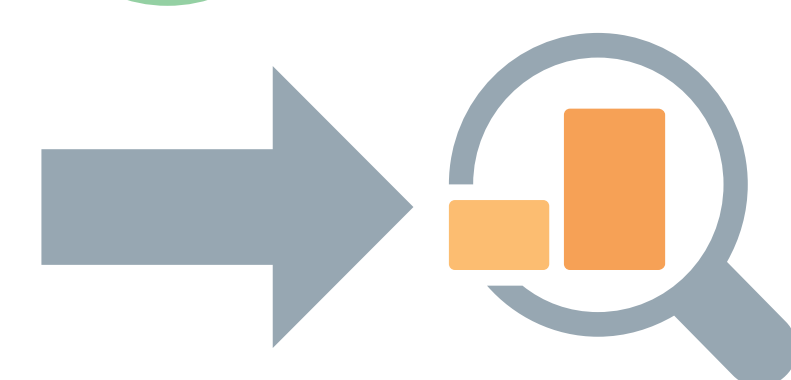
These two global independent medical educational activities included a 30-minute lecture by a leading expert on biological and immunological aspects of HIV infection that are unique to women and a 30-minute discussion in which 3 experts exchange viewpoints about increasing awareness and supporting best practice in management of comorbidities in women living with HIV.



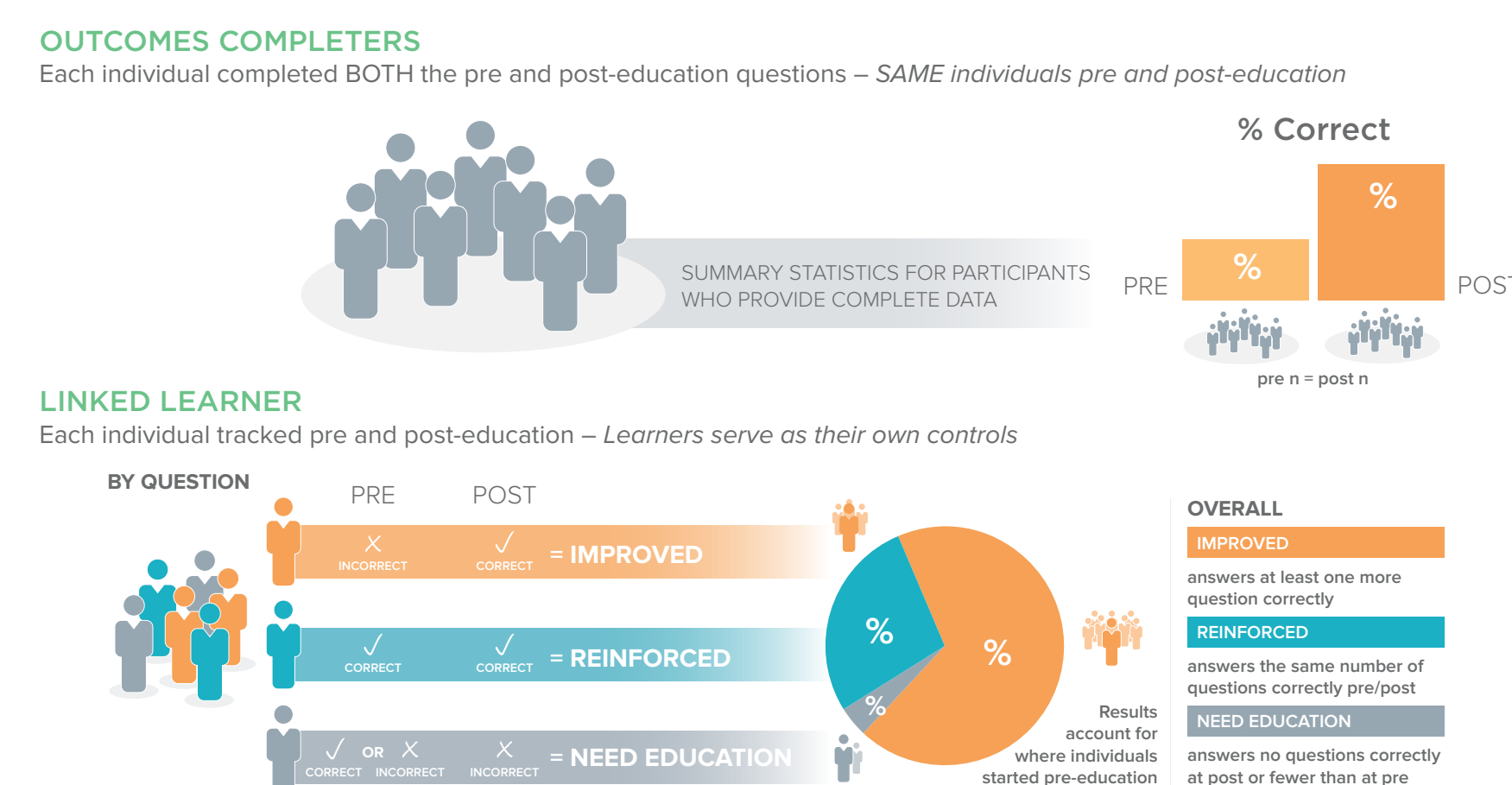
**Activity 1:  
HIV/ID Specialists**  
(n = 42)



**Activity 2:  
HIV/ID Specialists**  
(n = 45)



### How to Read the Linked Learner Assessment

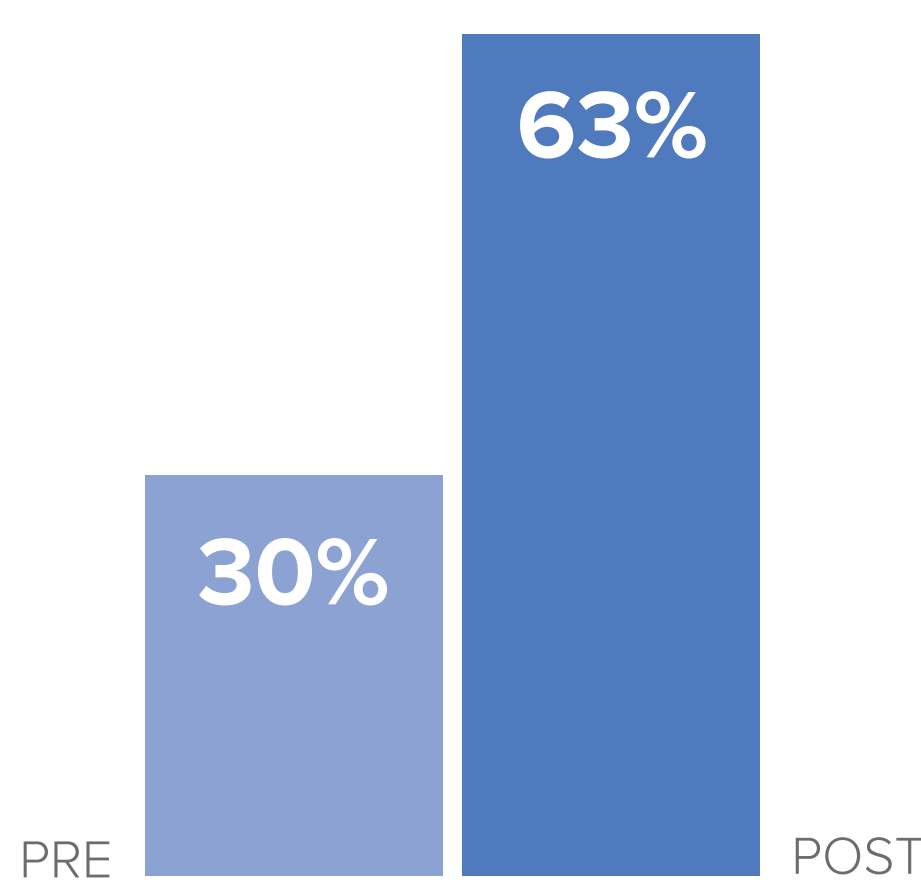


## RESULTS

### OVERALL

#### Activity 1: HIV/ID Specialists (n = 632)

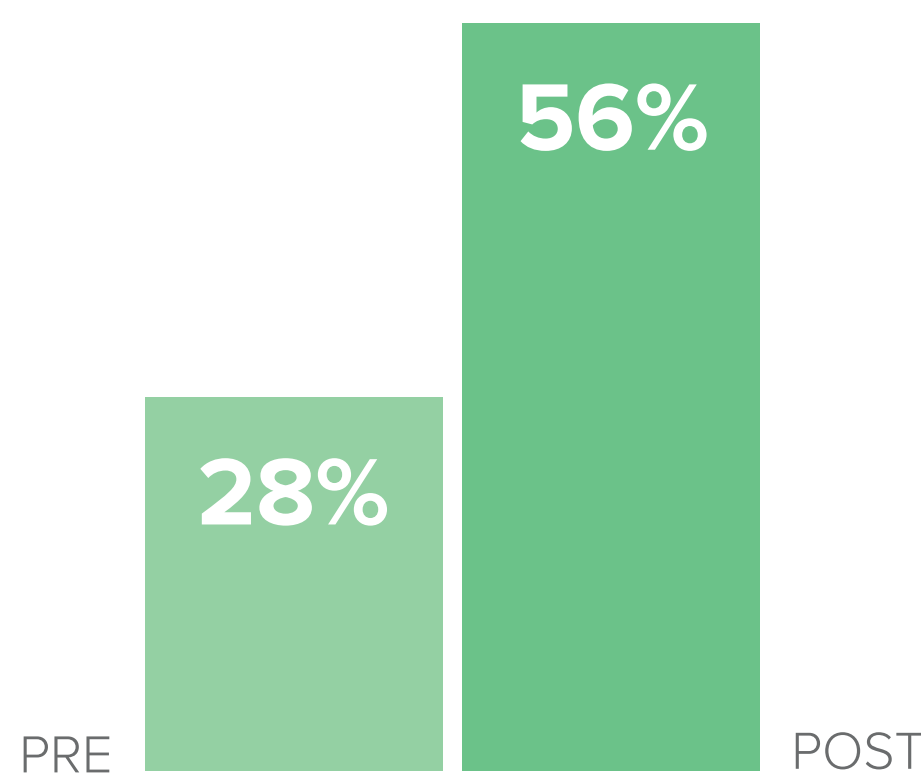
##### AGGREGATED RESULTS



CHI-SQUARE TEST **P < .001**  
SIGNIFICANCE (P < .05)

#### Activity 2: HIV/ID Specialists (n = 87)

##### AGGREGATED RESULTS



CHI-SQUARE TEST **P < .001**  
SIGNIFICANCE (P < .05)

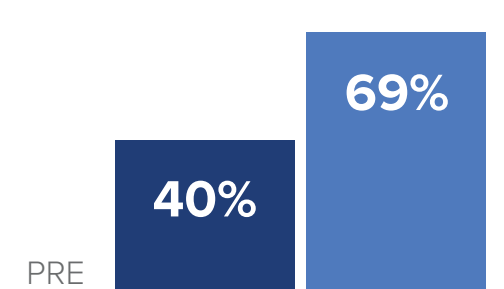
### QUESTION 1 RESULTS

#### Activity 1: HIV/ID Specialists (n = 42)

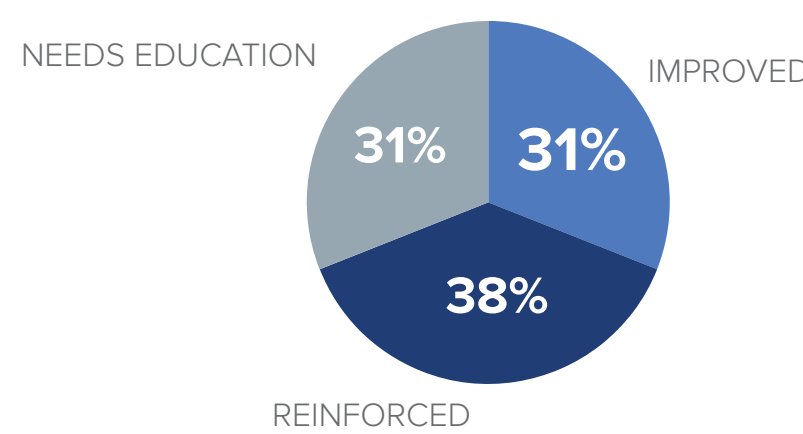
The question resulted in significant knowledge gains for HIV/ID specialists regarding a higher incidence of ischemic stroke in women living with HIV compared with men living with HIV.

**QUESTION:** Which of the following comorbidities had a higher incidence in women with HIV aged > 60 years compared with men with HIV aged > 60 years? (Correct Answer: Ischemic stroke)

##### AGGREGATED RESULTS



##### LINKED LEARNING RESULTS



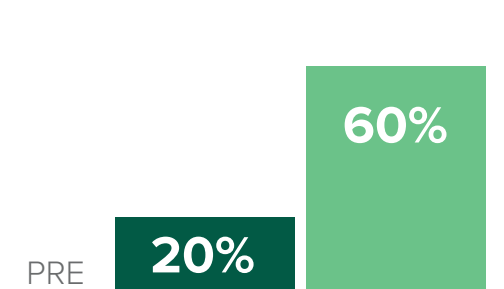
P < .01

#### Activity 2 HIV/ID Specialists (n = 45)

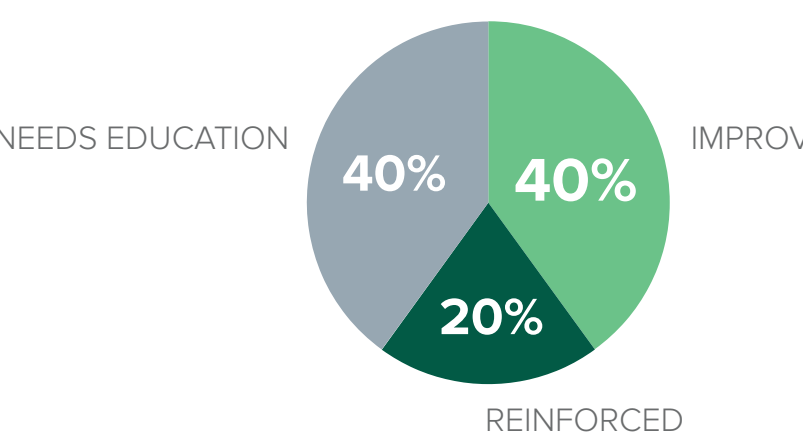
The question led to significant knowledge gains for HIV/ID specialists regarding the increased risk of acquiring specific comorbidities in women living with HIV compared with men living with HIV.

**QUESTION:** An international study of people living with HIV (PLWH) found that compared with men, women with HIV had a statistically significant higher risk of developing which comorbidity? (Correct Answer: Chronic kidney disease [CKD])

##### AGGREGATED RESULTS



##### LINKED LEARNING RESULTS



P < .001

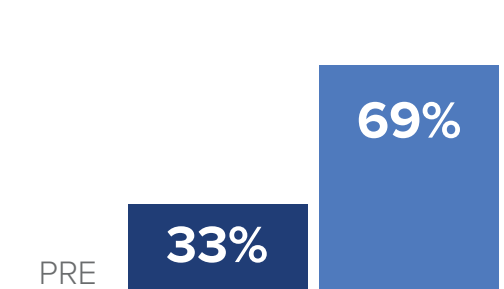
### QUESTION 2 RESULTS

#### Activity 1: HIV/ID Specialists (n = 42)

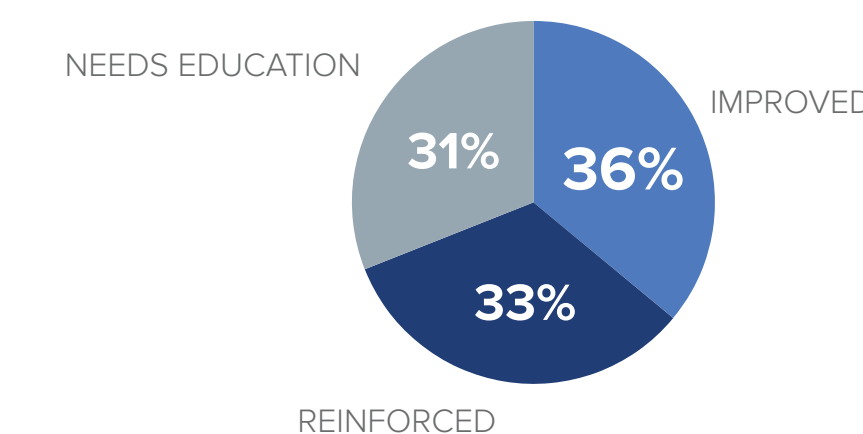
This question revealed that pre education the majority of HIV/ID physicians (67%) were unaware that Gardnerella reduced topical PrEP effectiveness. The education led to significant knowledge gains.

**QUESTION:** Typically, the tight epithelial barrier to the cervical and vaginal mucosae prevents the entry of pathogens. However, a predominance of what genus of organism can increase the risk of HIV acquisition and reduce the effectiveness of topically applied tenofovir pre-exposure prophylaxis (PrEP)? (Correct Answer: Gardnerella)

##### AGGREGATED RESULTS



##### LINKED LEARNING RESULTS



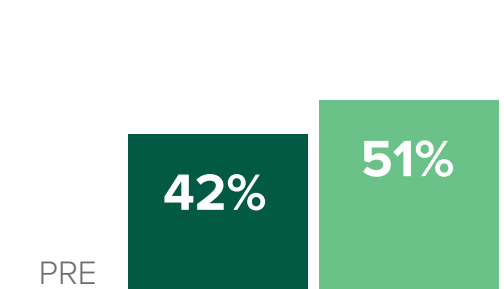
P < .001

#### Activity 2 HIV/ID Specialists (n = 45)

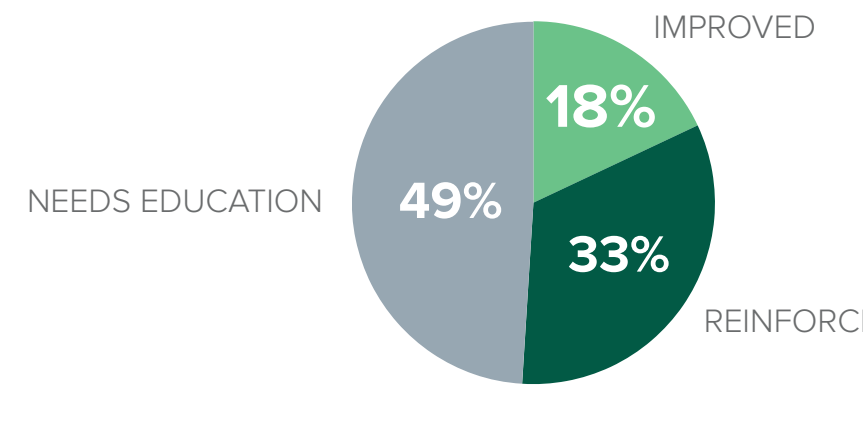
Despite this activity resulting in significant knowledge gains, there was a high proportion of HIV/ID specialists (49%) requiring education regarding HPV vaccination and HPV testing in women living with HIV.

**QUESTION:** A recently migrated 46-year-old Black woman from South Africa with HIV who is virologically suppressed and receiving tenofovir alafenamide and dolutegravir has recently entered your clinical practice. Which of the following interventions should she be offered as part of best practice? (Correct Answer: Recommend human papillomavirus (HPV) vaccination and perform regular HPV testing)

##### AGGREGATED RESULTS



##### LINKED LEARNING RESULTS



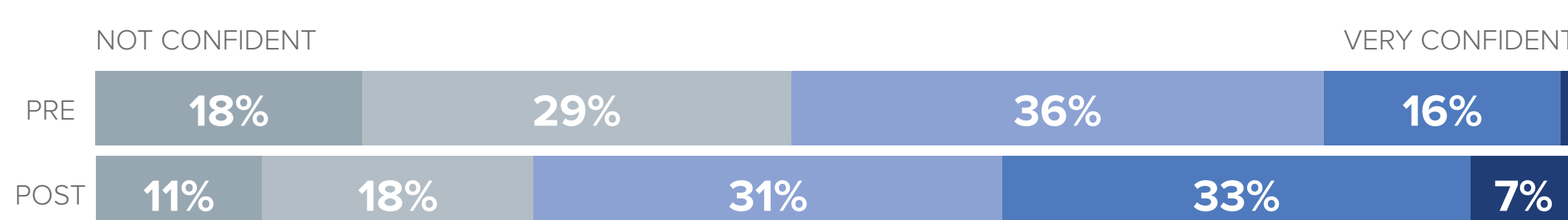
P = .248

### CONFIDENCE ANALYSIS

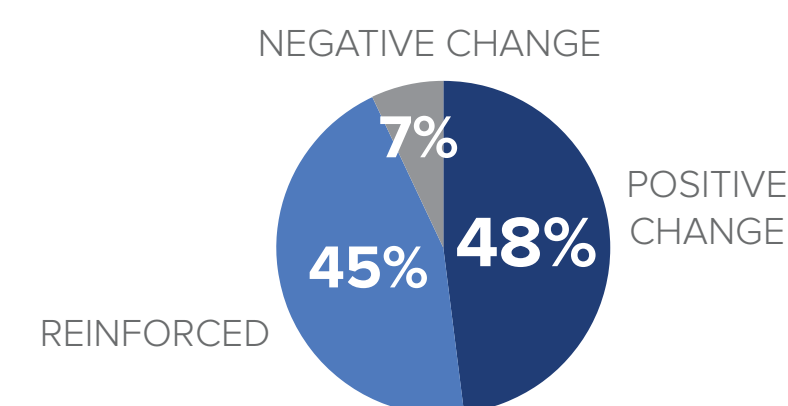
#### Activity 1: HIV/ID Specialists (n = 45)

48% of HIV/ID specialists had a measurable improvement in confidence regarding their ability to manage non-HIV related comorbidities that are specific to women. Following education, the confidence shift for HIV/ID physicians was high at 94%.

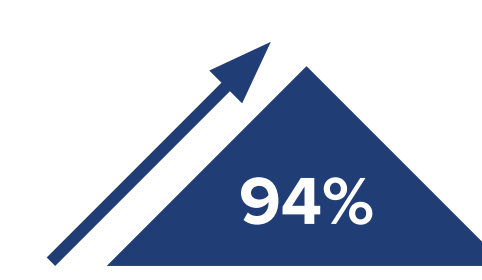
**QUESTION:** How confident are you right now in your ability to manage non-AIDS related comorbidities that are specific to women with HIV? (Select ranking from 1 [Not confident] to 5 [Very confident])



##### LINKED LEARNING RESULTS



##### TOTAL AVERAGE CONFIDENCE SHIFT



## CONCLUSIONS

- Online medical education significantly improved HIV/ID physician knowledge and confidence regarding health issues that impact women living with HIV disproportionately
- Baseline knowledge was low regarding the increased risk of comorbidity acquisition and prevalence in women living with HIV compared with men living with HIV
- Additionally, there was an ongoing unmet need for education in best practice in the prevention and management of comorbid conditions commonly experienced by women living with HIV
- This demonstrates a potential unmet need for training and education specific to the management of women living with HIV
- We propose more focus on women-specific issues for physicians and the broader team providing their care
- As 53% of people living with HIV in 2022 were women and girls, it is critical that physicians are aware of the burden of comorbidities and best practice in prevention, screening, and management of comorbidities to meet the specific challenges faced by women living with HIV

## ACKNOWLEDGEMENTS

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