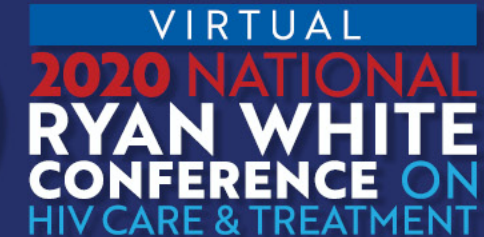# Demonstrating AETC Program Impact: A Regression Analysis of Clinical Expertise and Training Exposure Over Time

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AETC AIDS Education & Training Center Program
Northeast/Car bbean

30 YEARS

VIRTUAL 2020 NATIONAL RYAN WHITE CONFERENCE ON HIV CARE & TREATMENT

Introduction

The AIDS Education and Training Centers (AETC) program plays an important role in building the nation's workforce to provide quality care for people with HIV (PWH) and those at risk. The NECA AETC provides trainings and technical assistance to health care providers in HHS region 2 (New Jersey, New York, Puerto Rico and the US Virgin Islands) and seeks to create a new generation of primary care providers with increased knowledge and improved skills for treating PWH. These analyses were conducted to get a better understanding of the impact of training over time.

Methods

- Between October 2016 and December 2017, the NECA AETC delivered 2,827 trainings to 16,705 unique trainees (total attendance count was 30,789). 55% of total trainings were on clinical topics, and included 757 unique clinician participants (nurses, nurse practitioners, physicians, and physician assistants), with a total attendance count of 7,422.
- Self rated current expertise level (basic vs. intermediate vs. advanced vs. expert HIV care and treatment), which is measured at each training as part of routine AETC data collection, was used as the outcome metric.
- This analysis was restricted to clinicians receiving 2+ trainings on clinical topics. The average number of trainings was 6.7, with an average of 10.3 total hours, over an average period of 216.0 days.
- We conducted a logistic regression, adjusted for profession, gender, age, race, ethnicity, initial expertise level, total training hours, length of training period, and total number of trainings. Data analysis was performed using SAS for Windows, version 9.4.

Case Example from data over four years

Figure 1: Longitudinal Case Study: Nurse
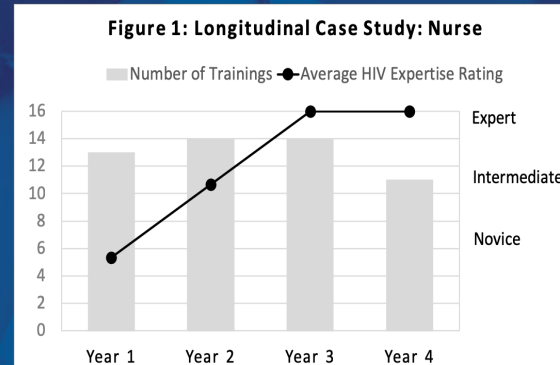
Results

- Clinicians with higher total training hours (odds ratio [OR], 1.025; 95% confidence interval [CI], 1.008 to 1.041; P .0033) and a longer training period (OR, 1.004; 95% CI, 1.003 to 1.005; P<.0001) were more likely to increase their HIV expertise (p<.05).
- The relationship between trainees' expertise and training hours and training period length remained significant when controlling for initial expertise level, profession, race/ethnicity, and gender.
- Further analysis specifically shows improvement in self rated clinical HIV expertise for clinicians experiencing 10+ hours of training over time.
- Specific differences in outcomes between professions will be explored further in future analyses.

Challenges/Limitations

There are limitations in our data and analyses due to the short duration of the program. The outcome metric is based on self report, which may be biased in both positive and negative ways to impact analyses. The initial purpose of this data collection was program evaluation rather than formal hypothesis testing. Nevertheless, we are confident that our findings reflect actual trends that taking more hours of training over a longer period is more likely to result in an improved HIV expertise level.

Conclusion

Overall, our analysis suggests that AETC trainings can make an important contribution to building clinician expertise over time.

Table: Logistic Regression Results

Predictor	OR[c]	CI[d]	p value
Total AETC Training Hours	1.025[#]	1.008-1.041	0.0033
Total Number of AETC Trainings	0.97[#]	0.938-1.004	0.0791[*]
Length of Training Period[e]	1.004[#]	1.003-1.005	<.0001
Initial Expertise Level	0.747[#]	0.668-0.837	<.0001
Profession			
Nurse Practitioner vs Nurse	0.315	0.193-0.515	<.0001
Physician vs Nurse	0.397	0.272-0.579	<.0001
Physician Assistant vs Nurse	3.843	2.558-5.774	<.0001
Ethnicity			
Hispanic vs Non-Hispanic	0.617	0.404-0.941	0.0251
Race			
Ameri Indi/Alaska Native vs White	1.039	0.389-2.772	0.9619[*]
Asian vs White	0.179	0.081-0.392	0.9879[*]
Black or African Ameri vs White	0.741	0.486-1.132	0.9669[*]
Nat HI/Pacific Islander vs White	<0.001	<0.001->999.999	0.9698[*]
Gender			
Male vs Female	1.91	1.358-2.685	0.0002

[c] OR, odds ratio
[d] CI, confidence interval
[e] The total number of days from the first AETC training to the last AETC training, calculated for each trainee
[*] The OR is not significantly different from 1 at a significance level of 0.05.
[#] OR for one-unit increase of the predictors

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