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Educational intervention to improve pharmacist knowledge to provide care for transgender patients

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## Online Appendix 1. Course objectives

Upon completion of the educational program, the participants were able to:

### Unit 1: Transgender Patient Care Introduction

- Correctly define relevant terminology such as gender dysphoria, gender development, transgender, and transsexual
- List at least three health promotion activities for the transgender patient population.

### Unit 2: General Health Issues of Transgender Patients

- Identify at least five social, economic, and health disparities faced by the transgender population.
- Correctly explain how social, economic, and health disparities contribute to an increased risk of cardiovascular diseases, sexually transmitted diseases, and smoking.
- Demonstrate how pharmacists can engage in appropriate health screening practices that are particular for the transgender population.

### Unit 3: Hormone Replacement Therapy for Gender Affirmation

- Correctly describe the components of the process of gender affirmation for transgender patients.
- List the masculine and feminizing hormone therapy and their benefits, risks, precautions, drug interactions, and monitoring parameters.
- Describe the role of the pharmacist and other healthcare providers in the steps of the process of gender affirmation for transgender patients.

## Online Appendix 2. Execution Score per Question\*

Unit	Item	Pre-Test		Post-Test	
		Mean (%)	Standard Deviation	Mean (%)	Standard Deviation
Unit 1: Introduction to the Care of Transgender Patients	K1.1: Which of the following statements correctly defines the term transgender?	62.5	0.488	98.28	0.131
	K1.2: Which of the following statements describes gender identity?	89.06	0.314	86.21	0.348
	K1.3: Which of the following statements is correct?	56.25	0.5	68.97	0.467
	K1.4: A person who identifies as a man, but at birth was assigned the sex of a woman, is recognized as:	59.37	0.495	79.31	0.409
	K1.5: A person who identifies as a woman, but at birth was assigned the sex of a man, is recognized as:	9.37	0.495	84.48	0.365
	K1.6: Which of the following alternatives represents how a transgender person can express their gender identity?	90.62	0.294	94.83	0.223
	K1.7: Which of the following services should the pharmacist offer to transgender patients?	93.75	0.244	94.83	0.233
Unit 2: General Health Issues of Transgender Patients	K2.1: Which of the following is a social and health disparity faced by transgender people?	28.12	0.453	53.45	0.503
	K2.2: Which of the following statements is true?	67.19	0.473	79.31	0.409
	K2.3: What difficulty might a transgender person who wants to have gender affirmation surgery face?	7.81	0.27	20.69	0.409
	K2.4: The actions you would take as a pharmacist with AA are:	93.75	0.244	87.93	0.329
	K2.5: Based on the previous case, if AA also indicates that two years ago he lost his job, that he currently practices sex work in exchange for money and that he does not have any type of support network, which of the following statements is correct?	65.62	0.479	74.14	0.442
	K2.6: How can pharmacists create an inclusive environment for transgender patients?	56.25	0.5	63.79	0.485
	K2.7: Which of the following screening tests should I recommend to transgender women?	37.5	0.488	65.52	0.479
	K2.8: Which of the following screening tests should I recommend to transgender men?	37.5	0.488	89.66	0.307
	K2.9: The screening test for bone mineral density should be considered in all patients:	10.94	0.314	53.45	0.503
	K2.10: Which patients should receive an annual Pap test as screening to detect cervical cancer?	35.94	0.484	81.03	0.395
	K2.11: Which patients should receive an annual breast cancer screening?	81.25	0.393	62.07	0.489
	K2.12: Which patients should be screened for cancer?	14.06	0.35	15.52	0.365
	K2.13: Which of the following statements describes one of the disparities facing the transgender population?	71.87	0.453	86.21	0.348
	K2.14: Health disparities:	84.37	0.366	87.93	0.329
Unit 3: Hormone Replacement Therapy for Gender Affirmation	K3.1: Which of the following alternatives presents the correct order of steps in a transgender person's gender transition process?	42.19	0.498	62.07	0.489
	K3.2: What is the benefit of starting hormone replacement therapy before puberty?	51.56	0.504	74.14	0.442
	K3.3: How frequent, in the first year of treatment, should a transgender patient who started hormone replacement therapy be monitored?	37.5	0.488	91.38	0.283
	K3.4: Which of the following alternatives is important to discuss with the transgender person before starting hormone replacement therapy?	76.56	0.427	91.38	0.283
	K3.5: A patient wishing to start using gender-affirming hormone replacement therapy should have laboratory baseline results of:	45.31	0.502	89.66	0.307
	K3.6: DD is a transgender person and wants to use hormone replacement therapy for gender affirmation. Of the following documents, which one is necessary for the pharmacist to dispense hormonal treatment?	84.37	0.366	96.55	0.184

Unit	Item	Pre-Test		Post-Test	
		Mean (%)	Standard Deviation	Mean (%)	Standard Deviation
	K3.7: According to current pharmacy practices in Puerto Rico, which therapy is NOT suitable for a transgender woman using hormonal therapy?	28.12	0.453	32.76	0.473
	K3.8: According to current practices in pharmaceutical care in Puerto Rico, adequate therapy for transgender men includes the following option:	34.37	0.478	67.24	0.473
	K3.9: As a pharmacist, what therapeutic alternative should I NOT recommend to a transgender patient?	35.94	0.484	46.55	0.503
	K3.10: What product is preferred for a transgender woman at high risk for thromboembolic disease?	26.56	0.445	84.48	0.365
	K3.11: A common adverse effect of using estrogen therapy is:	34.37	0.479	70.69	0.459
	K3.12: Among the effects related to the use of estrogen are:	64.06	0.484	67.24	0.473
	K3.13: Among the effects related to testosterone use are:	76.56	0.427	87.93	0.329
	K3.14: In a patient using masculinizing hormones, the testosterone level should be measured every months in the first year.	31.25	0.467	72.41	0.451
	K3.15: The estrogen dose in a transgender person is regulated according to the levels of:	37.5	0.488	48.28	0.504
	K3.16: For estrogen treatment to be effective, the level of testosterone in the blood must be:	32.81	0.473	75.86	0.432
	K3.17: As a healthcare professional, I must have an inclusive medical record for transgender people that includes the following, EXCEPT:	65.62	0.479	67.24	0.473
	K3.18: What are the results of laboratories that are affected according to the current hormonal configuration (current gender expression) of a transgender person who has used hormone replacement therapy for 2 years?	12.5	0.333	79.31	0.409
	K3.19: AM is a transgender man in testosterone therapy who comes to my pharmacy to pick up his medications. When dispensing the medications I realize that one of them is a teratogenic medication. As a pharmacist I think that:	85.94	0.35	86.21	0.348
	K3.20: How soon should a transgender person be evaluated after starting hormone replacement therapy?	15.62	0.366	62.07	0.489
	K3.21: For which of the following patients is Bone Densitometry (BDM) indicated?	15.62	0.366	18.97	0.395
*Note: Questions have been translated to English from original Spanish-language instrument					