

## Medical Spanish Endocrinology Educational Module

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### Abstract

**Introduction:** Hispanic/Latinx patients experience health disparities in endocrine disease, such as higher rates of mortality due to diabetes mellitus, worse outcomes in the surgical treatment of thyroid cancer, and lack of knowledge about bone health and osteoporotic fracture prevention. Educational strategies to teach cultural and linguistic medical Spanish knowledge to medical students have the potential to improve Hispanic/Latinx endocrine health. **Methods:** We created an 8-hour medical Spanish endocrine module targeting language and cultural skills acquisition. Specifically, students practiced obtaining a past medical history, obtaining a medications history, providing and explaining a diagnosis, explaining discharge instructions, and discussing sociocultural aspects of endocrine health. We divided the module into four 2-hour sessions: (1) preclass self-study, (2) class period, (3) role-play/interviewing practice session, and (4) case/cultural activity assignment. Participants completed a pre- and postassessment to measure student confidence level and knowledge. **Results:** We implemented the module four times at one medical school, with 47 fourth-year medical students with intermediate or higher general Spanish skills. Confidence increased for all learners in the endocrine-focused interview and exam in Spanish. Heritage Spanish learners, who were exposed to Spanish at home as children, reported higher postmodule confidence in eliciting the past medical history of endocrine problems. **Discussion:** The medical Spanish endocrine module improved the communication skills of medical students with intermediate through advanced Spanish proficiency. Future study should evaluate learner clinical performance metrics and applications to other groups of learners, such as resident physicians or health professions involved in the care of patients with endocrine disease.

### Keywords

Endocrinology, Medical Spanish, Health Disparities, Diversity, Inclusion, Health Equity

### Educational Objectives

By the end of this session, learners will be able to:

1. Demonstrate knowledge and use of Spanish in discussing endocrine health and illness as relevant to patient interviewing, information gathering, and counseling.
2. Provide a patient-centered explanation of diagnosis and plan for Spanish-speaking patients presenting with endocrine problems.
3. Integrate knowledge of Hispanic/Latinx cultural beliefs and social setting in respectful conversations with Spanish-speaking patients regarding endocrine health and illness to enhance patient comprehension and trust.
4. Self-assess confidence and limitations in medical Spanish as related to the endocrine care of patients.

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### Introduction

Language discordance in endocrine care has important health implications for linguistic minorities in the United States, the majority of whom speak Spanish.<sup>1</sup> Hispanic/Latinx individuals are more likely to have undiagnosed diabetes<sup>2</sup> and higher rates of diabetes-related mortality than non-Hispanic Whites.<sup>3</sup> Additionally, data show some differences among Hispanic/Latinx persons from varying national origins. For example, individuals of Cuban and South American origin have higher odds of living with undiagnosed diabetes.<sup>4</sup> Studies have also shown a trend toward decreased insulin use among Spanish-speaking patients compared with English speakers<sup>5</sup> and poorer adherence to glucose monitoring for Hispanic youths with type 1 diabetes mellitus compared to White youths.<sup>6</sup> A 2017 study showed that Spanish-speaking patients with diabetes who switched from language-discordant to language-concordant primary care providers significantly improved their glycemic control,<sup>7</sup> illustrating the significance that language-concordant care can have for patient outcomes in diabetes.

Among other endocrine disorders, US Hispanic/Latinx women are at a higher risk of gestational diabetes mellitus than non-Hispanic women.<sup>8</sup> Furthermore, Hispanic/Latinx patients with thyroid cancer who receive surgical care have higher inpatient mortality and complication rates, longer lengths of stay, and greater mean total costs.<sup>9-11</sup> Some studies show that Hispanic/Latinx adults have increasing rates of osteopenia-related bone fractures.<sup>12,13</sup>

Sociocultural context plays an important role in endocrine health for Spanish-speaking patients, including in their decisions about self-care, lifestyle, and access to nutrition and medical attention. For example, insulin-treated Hispanic/Latinx patients in one study reported not performing glucose self-monitoring because of financial concerns.<sup>14</sup> Others report using folk remedies in place of insulin out of fear of adverse effects.<sup>15</sup> Additionally, as family needs are considered most important from a cultural standpoint (a concept known as *familismo*), complying with a rigorous treatment regimen, such as for diabetes, might be viewed as self-indulgent in a Hispanic/Latinx household.<sup>15</sup> Successfully addressing lifestyle issues that affect endocrine health such as obesity, nutrition, parity, lactation, calcium/vitamin D intake, smoking, and physical activity must take into account patients' culturally acceptable behaviors.<sup>16,17</sup> These challenges highlight the importance of a medical Spanish educational program that addresses not only the linguistic elements of communication but also the cultural aspects that can affect comprehension, satisfaction, trust, and treatment adherence.

Despite the significance of Hispanic/Latinx endocrine disease burden, only roughly 6% of the US endocrinology subspecialist workforce is represented by Hispanic/Latinx physicians,<sup>18</sup> and no published medical Spanish curricula currently address endocrine health communication as a target educational objective. Medical Spanish teaching has gained national attention as an approach to increase the language-concordant health care workforce for the growing Spanish-speaking US population. Despite the growth of medical Spanish initiatives, many courses lack curricular structure and resources to facilitate teaching.<sup>19,20</sup> Organizing curricula by organ systems may be a successful strategy for incorporating medical Spanish education in flexible ways within medical education.<sup>21</sup>

One available medical Spanish curricular publication, the S.A.B.E.S. program,<sup>22</sup> includes a patient case involving endocrine issues. Another recent publication illustrates a stand-alone organ system-based curriculum focusing on musculoskeletal and dermatologic health and illness.<sup>23</sup> However, a stand-alone medical Spanish module targeting the endocrine system has not been published. The purpose of this medical Spanish endocrine

module is to provide a focused, systems-based, flexible approach to teaching and learning endocrine Spanish skills by integrating relevant terminology, patient-centered communication strategies, and sociocultural health factors within existing medical school educational curricula.

## Methods

### Context

The endocrine Spanish module was initially launched in the context of a fourth-year medical Spanish course at the University of Illinois College of Medicine. The module can be a part of a multimodule medical Spanish educational program, such as was the case at our medical school, or can be structured as a single 8-hour module. In order to participate in the module, students had to be enrolled in the fourth year of medical school to ensure that they were already familiar (in English) with common endocrine symptoms, anatomy, diseases, medical interview questions, and basic management principles typically covered during basic US medical school preclinical curricula. Students were also required to self-report an intermediate or higher general Spanish level, widely recognized by educators as the minimum skill level to benefit from a medical Spanish course.<sup>21</sup> We used the Interagency Language Roundtable modified scale for physicians, an instrument validated for self-report of health care language skills,<sup>24</sup> to confirm that students met the required language level prior to enrollment. To lead the module, facilitators should have an advanced or higher Spanish level. The main educator and/or course director in a supervisory role should be a medically and/or linguistically trained faculty member, as recommended by experts, to meet basic standards for medical Spanish education.<sup>21</sup>

### Classroom Setup

To facilitate active student participation, we used a classroom equipped with a drawing board and a minimum of one medical Spanish educator/instructor. Similarly, a virtual classroom could be set up with videoconferencing whiteboard capabilities to implement the classroom portion of the module.

### Implementation

We divided the 8-hour module into a 2-hour self-study before class, a 2-hour class period, a 2-hour role-play/interviewing practice session, and a 2-hour case/cultural activity assignment (Table 1). Necessary course documents for the facilitator to implement the endocrine module included the facilitator guide (Appendix A), vocabulary and resources handout for learners (Appendix B), cultural presentation instructions (Appendix C), rapid-fire class time activity (Appendix D), case note and

**Table 1.** Curricular Structure of the 8-Hour Endocrine Spanish Module

Curricular Element	Description	Preparation for Facilitator
Self-study before class (2 hours)	Vocabulary-building resources to engage learners through reading and listening.	Review Appendix A to prepare for the class session while the students complete the self-study activities in Appendices B and C. Review Appendix B and share with learners. Appendix B provides a review of key endocrine vocabulary and a list of optional resources for reading and listening activities. Review Appendix C and share with learners. This document describes the instructions for the cultural study assignment.
Class period (2 hours)	Review of new vocabulary learned during self-study through a case in which faculty play the role of patient. Student-led role-play of an endocrine case. Student-led cultural topic presentation. Small-group practice exercises on medical decision-making in endocrine health. Rapid-fire case stem activities in which students take turns verbally giving patient-centered explanations and plans of care for short cases.	Have Appendix A ready for class so that the suggested timeline of in-class activities can be followed. Provide learners with Appendix D (blank rapid-fire case stem activity) to be completed during the class period.
Interviewing practice or role-play activity after class (2 hours)	Learners conduct practice interviews of Spanish-speaking patients at a clinical site (if feasible) or role-play practice in pairs or small groups (which can be self-scheduled).	Consider whether practice interviews at a clinical site are feasible and make appropriate arrangements, or coordinate student pairs or small groups for role-play practice. If role-play practice is used, case stems from Appendix D can serve as the starting point for the student playing the role of patient.
Case note assignment after class (2 hours)	Learners each write one endocrine case note (history and physical) in Spanish, with the assessment and plan section written as they would explain the diagnosis and plan to a patient (avoiding unexplained jargon).	Provide learners with Appendix E (case note instructions and reflection template). Use Appendix F (faculty grading rubric) to provide learners with feedback after they submit their endocrine case note.

reflection instructions and template (Appendix E), and faculty grading rubric (Appendix F).

Before class, learners received the vocabulary and resources handout (Appendix B) that included a vocabulary-building, self-study guide for review prior to the class session and a list of optional resources for learners, as well as the cultural presentation student handout (Appendix C) with instructions on how to prepare the cultural topic assignment. The 2-hour self-study period included material for reading and listening to that introduced the learner to the relevant vocabulary and context for the topic that would be later discussed in class (Appendix B). Vocabulary building was an activity that could be done before class so that class time could be spent applying the vocabulary in a contextualized fashion. Faculty preassigned a learner or a small group of two to three students to prepare a cultural study presentation in Spanish to highlight sociocultural issues in the Spanish-speaking community relevant to the endocrine organ system (cultural assignment instructions for the facilitator were in Appendix A and for learners in Appendix C). The presentation was prepared during self-study before class and then presented in Spanish during the class period.

Within the 2-hour class period, participants reviewed new material with the instructor (30 minutes), participated in role-plays and discussed cultural topics in a large-group setting

(30 minutes), practiced small-group exercises (20 minutes), and orally participated in rapid-fire case stem activities (35 minutes). First, the faculty member presented new material through review of relevant medical Spanish vocabulary as well as interview questions tailored to endocrinology patient scenarios. Some features of the class period included a discussion of relevant anatomy and regional variants, guided questions in addressing chief complaints of the endocrine organ system, and applicable instructions for administering a physical examination relevant to a given endocrine problem. Faculty followed a Spanish-immersion style of teaching in which they announced case-based questions in Spanish to incite peer discussion and promote the active application of medical Spanish terminology.

Next, small groups of learners teamed up to tackle complex health concepts relevant to endocrine health in which a potential cultural belief or social/structural barrier (e.g., finances, transportation) presented a clinical challenge. Individual small groups were responsible for debating a discussion prompt in Spanish (e.g., a patient expressing concerns about insulin side effects), concluding with a group consensus, and presenting their viewpoints to the class in Spanish. We provided sample learning scenario question prompts and detailed guidance for facilitators to lead the class throughout Appendix A. Finally, a rapid-fire case study activity (Appendix D) asked participants to evaluate case scenarios and communicate testing results, a diagnosis, and a plan for treatment in Spanish.

Following class time, participants were required to interview Spanish-speaking patients at medical school clinics or hospital rotations and/or to self-schedule role-play practice time in pairs or small groups. If conducting role-plays with peers, students were invited to use one or some of the case stems presented in class (Appendix D) as a starting point. From one of these (real or role-play) interviews, participants completed a case documentation assignment in which they wrote a history and physical case note in Spanish with accurate medical terminology. Faculty instructed learners to construct their case notes' written assessment and plan using patient-centered nontechnical language to correspond with how the learner would orally explain the diagnosis and plan to the patient. By focusing on how this critical information would be conveyed verbally to a patient, learners were able to better prepare for oral performance of these skills, similar to using a customized script that could later be applied to clinical situations. During the 2-hour role-play/interviewing practice session, learners were tasked with taking turns playing the role of interviewer and patient, using the written case notes in order to verbally practice interviewing as well as discussing the diagnosis and plan.

Finally, the case note assignment included a guided reflection activity so the participants could track their strengths and limitations in providing endocrine care in Spanish (Appendix E). The reflection activity could be completed in Spanish or English depending on the learner's preference. Learners reflected on possible examples of endocrine scenarios that they would be able to manage independently in Spanish, scenarios in which they would request a professional interpreter, and areas of endocrine Spanish that they wished to further study or practice. Participants in our session had 1 week to complete the postclass assignments, which were estimated to require 2 hours to finish.

#### Evaluation

Participants completed a pre- and postassessment to measure student confidence level and knowledge regarding medical Spanish communication skills related to endocrine health (Appendix G). We distributed preassessments 2 weeks prior to the course start date, and we made postassessments available immediately after the conclusion of the course for up to 2 weeks. The assessments tested medical Spanish vocabulary, grammar, and comprehension/comprehensibility pertaining to endocrinology using 20 multiple-choice, free-response, and fill-in-the-blank questions. We based the assessment questions, answer key, and scoring rubric for free-response questions on those developed for a previously published medical Spanish

module regarding musculoskeletal and dermatologic health.<sup>23</sup>

An experienced medical Spanish educator (Pilar Ortega) adapted the questions to the endocrine topic and obtained feedback from two additional bilingual professionals, including one student (Itzel López-Hinojosa) and one medical education researcher (Jorge A. Girotti).

We tabulated scored responses by question type to yield vocabulary, grammar, and comprehension scores for each learner. Vocabulary knowledge included accurate use of medical terminology, and grammar knowledge included verb conjugation, gender/number agreement, and sentence structure. Accurate comprehension involved a student's ability to respond appropriately to questions following a Spanish doctor-patient dialogue; comprehensibility was measured by the student's ability to provide accurate Spanish patient-centered instruction or information appropriate for patient comprehension following a prompt in English (e.g., "Please tell the patient in Spanish she needs a thyroid ultrasound"). Due to the interactive nature of elements of comprehension (the student understanding the patient) and comprehensibility (the student's language being understandable by the patient), we grouped both as a single category called the comprehension/comprehensibility score. Two evaluators used a predetermined scoring rubric for vocabulary, grammar, and comprehension/comprehensibility to evaluate free-response items. We then compared each evaluator's scores and discussed any variance between raters to generate a final score per question item per learner. Participants also rated their level of confidence in endocrine Spanish communication on a 5-point Likert scale. The postassessment also included an opportunity for learners to provide feedback about the module.

#### Statistical Analysis

We examined trends in data using descriptive statistics. We evaluated differences between the scores and values of the assessments by using paired *t* tests to compare pre- and postmodule scores. To examine pre- and postmodule performance variance, we conducted a regression analysis. The regression analysis controlled for factors in ethnicity (Hispanic vs. non-Hispanic), Spanish spoken at home, prior experience with advanced Spanish courses, and gender. Data compilation and analyses were conducted using Stata (Version 16, StataCorp).

#### Results

We implemented this medical Spanish endocrine module four times over a 2-year period (2016-2018), involving a total of 47 participants from a single medical school in the US. All participants completed the module. Eligible participants had

self-reported intermediate level or above Spanish proficiency, with approximately half (25 students, 53%) reporting an advanced level. The facilitator was a medical Spanish instructor who was a physician faculty member in the Department of Medical Education. Of the 47 participants, 18 were male (38%), 29 were female (72%), 11 self-identified as Hispanic/Latinx (23%), nine were heritage Spanish speakers (19%, defined as students raised speaking Spanish at home), and 21 reported prior exposure to advanced Spanish curricula (45%) at the university level.

### Knowledge and Confidence Scores

Comparing pre- and postassessment results, students demonstrated significant improvement in medical Spanish comprehension/comprehensibility scores (73% to 91%; Table 2) after the module, whereas their grammar and vocabulary scores did not significantly change. The confidence level of students increased for all learners in the endocrine-focused interview and exam in Spanish. Students significantly improved their comfort in all domains, including eliciting an endocrine past medical history (68% to 92%), obtaining a medication history (66% to 94%), providing and explaining endocrine diagnoses (50% to 84%), explaining discharge instructions (50% to 76%), and discussing sociocultural elements (68% to 86%).

There was no significant difference in the knowledge scores and confidence levels in the postassessment when controlling for gender, ethnicity, heritage Spanish experience, and prior experience with advanced Spanish courses (Table 3). This suggests that despite differences in prior exposures, students at intermediate or advanced Spanish levels can reach similar levels of endocrine interviewing skills following this focused module. Of note, items related to obtaining an accurate past medical history did demonstrate higher confidence in postassessment for learners with heritage Spanish skills ( $p < .05$ ) but lower

confidence for those who had previously taken advanced Spanish courses ( $p < .05$ ; Table 3). No other statistically significant relationship was found between the potentially confounding variables and the change in outcomes or confidence between the pre- and postassessments.

### Learner Feedback

Overall, 37 of 47 learners (79%) completed the postmodule feedback questions. Thirty-one of 37 respondents (84%) strongly agreed that the module resulted in being more prepared to utilize endocrine medical Spanish for a patient evaluation, consult, or treatment, and the other six students (16%) agreed with this statement. Moreover, 30 of the 37 respondents (81%) strongly agreed that the feedback they received on assignments was informative and instructive, six (16%) agreed, and one (3%) disagreed. Regarding feedback for improvement, some learners suggested that additional practice time by means of standardized or live patients or role-plays would be helpful. Others commented that providing additional structure to the cultural assignments could help ensure that student presentations on cultural topics would be practical and easy to follow for their peers.

### Discussion

To address the need to improve clinician-patient Spanish communication about endocrine health, we developed a medical student Spanish endocrine module. Our intervention effectively improved the endocrine Spanish skills of students with a baseline self-reported as intermediate through advanced Spanish, particularly with regard to comprehension and comprehensibility scores. This indicates that after participating in the module, learners were better able to understand and respond to endocrine-related patient dialogues, and that the responses they generated were more comprehensible by patients, as determined by raters. This improvement reflects the learning objectives of

**Table 2.** Pre- and Postassessment Change in Skills Performance and Confidence Levels

Course Skills	No.	Pre Scores		Post Scores		$p^b$
		$M$ (SD)	% $M^a$	$M$ (SD)	% $M^a$	
Performance outcomes						
Total vocabulary score	47	8.8 (1.4)	73	8.3 (1.7)	69	.11
Total grammar score	47	8.5 (1.7)	65	8.7 (1.7)	79	.53
Total comprehension score	47	9.5 (1.5)	73	7.3 (1.7)	91	<.001
Confidence level outcomes						
Obtaining a past medical history	43	3.4 (1.1)	68	4.6 (0.5)	92	<.001
Obtaining a medications history	43	3.3 (1.2)	66	4.7 (0.6)	94	<.001
Providing and explaining a diagnosis	43	2.5 (1.1)	50	4.2 (0.7)	84	<.001
Explaining discharge instructions	43	2.5 (1.2)	50	3.8 (1.1)	76	<.001
Discussing sociocultural elements	43	3.4 (1.1)	68	4.3 (0.7)	86	<.001

<sup>a</sup>Percentage mean scores adjust for denominator in raw total scores that vary depending on pre- and postassessment measures and by outcomes.

<sup>b</sup>Significant at  $p < .001$ .

**Table 3.** Factors Affecting Improvement in Pre- and Postassessment Outcomes

Factor	Performance Outcomes			Learner Confidence Scores				
	Total Vocabulary Score RCC (SE) <sup>a</sup>	Total Grammar Score RCC (SE) <sup>a</sup>	Total Comprehension Score RCC (SE) <sup>a</sup>	Obtaining Past Medical History RCC (SE) <sup>a</sup>	Obtaining Medications History RCC (SE) <sup>a</sup>	Explaining Diagnosis RCC (SE) <sup>a</sup>	Explaining Discharge Instructions RCC (SE) <sup>a</sup>	Discussing Sociocultural Elements RCC (SE) <sup>a</sup>
Hispanic/Latinx	0.2 (0.7)	0.3 (0.6)	0.2 (0.6)	0.3 (0.2)	0.4 (0.2)	-0.1 (0.2)	-0.1 (0.4)	0.4 (0.3)
Spanish at home	0.0 (0.7)	0.2 (0.7)	0.1 (0.7)	0.5 (0.2) <sup>b</sup>	0.4 (0.3)	0.3 (0.3)	0.4 (0.4)	0.4 (0.3)
Prior advanced Spanish	-0.5 (0.5)	-0.9 (0.5)	-0.3 (0.5)	-0.4 (0.2) <sup>c</sup>	0.0 (0.2)	-0.0 (0.2)	-0.1 (0.3)	-0.2 (0.2)
Male	-0.4 (0.5)	-0.1 (0.5)	0.3 (0.5)	-0.1 (0.2)	-0.1 (0.2)	-0.2 (0.2)	0.0 (0.3)	0.0 (0.2)

Abbreviation: RCC, regression coefficient of change.  
<sup>a</sup>RCCs indicate change in outcome scores by factor, adjusting for pre- and postassessment differences.  
<sup>b</sup>*p* = .014.  
<sup>c</sup>*p* = .008.

the module, which are not focused on vocabulary or grammar but rather on interviewing skills with patients as well as patient-centered, culturally informed explanations of diagnoses and plans of care. Vocabulary and grammar enhancements may take more time to develop than can be spent during a single exposure,<sup>25</sup> such as an 8-hour module. The 8-hour time frame of our module is more reasonable for equipping students with ability to apply the vocabulary and grammar skills they already have to patient-centered conversations around endocrine health and illness. For this reason, the module is not intended for beginner Spanish learners, who would be best directed to general Spanish instruction until they reach an intermediate skill level prior to initiating focused medical Spanish education.<sup>25</sup>

Despite students having variable levels of general Spanish proficiency (approximately half were at the intermediate level, and half were advanced), all students were able to end the module with similar levels of medical Spanish knowledge on the focused endocrine topics taught and tested. The positive results of implementing our endocrine module with students of different Spanish levels support the use of targeted Spanish organ system modules in medical education as an effective strategy, given the Spanish-level variation among medical students. According to residency application data, approximately 53% of residency applicants report a low-intermediate or higher Spanish level,<sup>26</sup> meaning that more than half of medical students could potentially benefit from such a module. If sufficient students were interested in enrolling, it might also be useful to consider offering several sessions, divided by proficiency level.

Importantly, our data demonstrate some differences among groups of learners. For example, heritage Spanish learners, who were exposed to Spanish at home when growing up, reported higher postmodule confidence in eliciting the past medical

history of endocrine problems. This difference may be related to increased experience with relatives with chronic endocrine conditions or may reflect the impact of lived experiences in a heritage language on the confidence to phrase medical history questions appropriately.<sup>27</sup> Relatedly, when controlling for other confounding variables, some learners who reported advanced Spanish courses at the university level showed lower confidence in this item after the module. It is possible that the module made these students more aware of the complexities of talking about endocrine past medical history beyond the words or grammar alone. Learning about the cultural-linguistic interplay involved in asking medical history questions of Spanish-speaking patients may therefore increase learners' awareness of their own limitations and lead to safer and more effective communication. This could include strategies like slowing down, using plain language, confirming patient understanding through teach-back, and requesting a medical interpreter when needed.<sup>28,29</sup>

#### Lessons Learned

We learned several valuable lessons from implementing this module. First, based on learner feedback, we improved the structure for the cultural assignments in the module to make instructions clearer so that the cultural presentations in class would be consistently informative for peers. The evolving nature of population health also requires periodic evaluation of the sociocultural and health disparities topics that are covered in the module. Engaging learners in identifying the most recent literature on the sociocultural topic of their choice and proposing solutions relevant to current patient care in endocrine health is a way to ensure that class discussions remain up to date. Relatedly, given the diverse nature of cultural beliefs and practices as well as regional varieties of language within the heterogeneous group of US Spanish speakers, it is not possible to provide a single comprehensive resource that includes all acceptable variations

and cultural health concepts. Thus, we encourage facilitators and learners to contribute to these resources in a progressive fashion, using their own patients, communities, and lived experiences as key resources in expanding their awareness of patient-centered communication skills useful for endocrine health in Spanish-speaking subgroups.

Second, we propose adding a focused endocrine health standardized patient (SP) encounter at the conclusion of the module to directly observe and provide feedback on learner skills performance in a realistic clinical scenario. Further study is needed to evaluate the interaction between cultural and language concordance and to develop an appropriate rating rubric for SP encounters in Spanish.

#### Limitations

The lack of a summative performance assessment is a limitation of our project. Medical Spanish expert consensus recommends a performance assessment such as an SP encounter prior to determining that a learner is ready for independent Spanish-speaking patient care.<sup>21</sup> The current module contains multiple opportunities for formative assessment and individualized feedback, including in-class role-plays, small-group sessions in which the faculty member can observe and provide comments, and student-written case notes in Spanish for which the faculty member can offer recommendations for improvement. However, if the endocrine module forms part of a multimodular medical Spanish curriculum, we suggest providing opportunities for SP encounters and performance evaluations after each module prior to a final SP encounter as a summative assessment.

#### Future Directions

Other options for implementing the 8 hours of activities include (1) conducting the module in a single day if the module is part of a full-time, intensive, multitopic medical Spanish course; (2) spreading the module over 1 week, with 2 hours of scheduled class time and the rest of the time required to complete the module self-scheduled by students over a 1-week time period; or (3) spreading the module out over a 2- to 4-week clinical rotation (e.g., endocrinology clinic) in which module work is supplemented by clinical experiences relevant to endocrinology. The 2-hour class time could be further broken up, if desired, into a 1-hour session that focuses more on vocabulary and interview questions and another 1-hour session that focuses on cultural elements and discussing diagnosis and plan of care. This endocrine Spanish module can be potentially applied in multiple medical education settings (e.g., medical school preclinical endocrine modules, clinical clerkships, primary care residency programs such as internal medicine and family medicine, and endocrinology

fellowships) as a strategy to improve language-concordant care and reduce endocrine health inequities.

### Appendices

- A. Facilitator Guide.docx
- B. Vocabulary and Resources Student Handout.docx
- C. Cultural Presentation Student Handout.docx
- D. Rapid-Fire Case Stem Activity Student Handout.docx
- E. Case Note and Reflection Student Handout.docx
- F. Faculty Grading Rubric.docx
- G. Learner Pre- and Postassessment Questions.docx

*All appendices are peer reviewed as integral parts of the Original Publication.*

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### Ethical Approval

The University of Illinois at Chicago Institutional Review Board deemed further review of this project not necessary.

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