An Evidence-Based Approach to Implementing the NIH Patient Reported Outcomes Measurement Information System (PROMIS®) in a Bolivian Public Cancer Center

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Background

- Cancer is the second leading cause of death in Bolivia with 18,600 new cancers each year.
- Most cancer patients in Bolivia present with advanced disease, which is associated with a high prevalence of comorbid symptoms impacting quality of life.
- Given the limited cancer workforce in Bolivia, providers must prioritize diagnostic and treatment decisions over comprehensive symptom management during abbreviated patient visits.

NIH PROMIS® Technology

- NIH Patient-Reported Outcomes Measurement Information System (PROMIS®) is a comprehensive set of tools to measure self-reported physical, mental, and social health in people ages 5–90.
- PROMIS® iPad App offers self-administered computer-adaptive tests that provide personalized, precise and rapid evaluations of over 90 symptom and functional domains.
- Despite the availability of PROMIS® translations in Spanish and the extensive validation of PROMIS® in adult and pediatric cancer care, PROMIS® en Español remains underutilized in cancer centers throughout Latin America.

Objectives

- Implement PROMIS® symptom screening in a multicultural, low-resource public cancer center in Bolivia, the Instituto Chuquisaqueño de Oncología (ICO).
- Using evidence-based implementation frameworks, develop a replicable structured implementation approach to help other low-resource centers in Latin America implement NIH PROMIS® technology.

Methods

- The Expert Recommendations for Implementing Change (ERIC) were incorporated into the EPIS model of implementation process (i.e., Exploration, Adoption/Preparation, Implementation, Sustainment) to develop a structured, evidence-based approach to implement PROMIS® in ICO. (Figure 1)
- A multidisciplinary implementation coalition analyzed the ICO-specific barriers and facilitators to PROMIS® implementation across the Consolidated Framework for Implementation Research (CFIR) domains to provide a contextualized intervention and implementation blueprint meeting International Society for Quality of Life Research standards.
- All patients over 18 years old with basic Spanish proficiency receiving cancer care at ICO between 6/2018 and 3/2019 were considered for inclusion; participants were excluded if cognitive or physical impairment precluded participation.
- PROMIS® computer-adapted tests of anger, anxiety, depression, fatigue, and pain interference were completed by eligible participants before each clinic visit with a frequency of no more than once every 3 weeks. (Image 1)

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Figure 1. Structured Implementation Approach of PROMIS® in ICO Cancer Center Utilizing ERIC Recommendations Across EPIS Processes of Implementation

2. Build a Coalition 5. Tailor Strategies Involve patients/consumers and family members Conduct cyclical small tests of change Identify and prepare champions Identify early adopters Develop academic partnerships Use evaluative and iterative strategies Obtain patient and family feedback Use an implementation advisor Recruit, designate, and train for leadership Organize clinician implementation team meetings Obtain formal commitments Purposely reexamine the implementation 3. Develop a Formal Implementation Blueprint 6. Clinician Implementation Support Adapt local environment for change **8. Share Gained Knowledge** Provide clinical supervision Develop technical assistance plan Inform local opinion leaders Develop and organize quality monitoring systems Optimize relay of clinical data to providers Conduct educational outreach visits Conduct educational outreach visits Promote adaptability Increase Demand Model and simulate change Audit and provide feedback Use phased implementation approach to scale up 1. Initial Site Assessment 9. Build Dissemination 4. Develop and Distribute Educational Materials Conduct local needs assessment 7. Patient Implementation Support **Organization** Prepare patients to be active participants Inform local opinion leaders Engage with patients to enhance uptake and adherence Contract and fund for the clinical Conduct local consensus discussions Use train-the-trainer strategies innovation Assess for readiness and identify barriers and facilitators ICO Site Visit #2 Form PROMIS-ICO ICO Site Visit #1 Form PROMIS-Bolivia S.A. ICO Site Visit #4 5th ICO Site Visit ICO Site Visit #3 1. Conduct multidisciplinary ICO Coalition . Meet ICO leadership 1. Model and simulate not-for-profit to lead 1. Iteratively develop 1. Establish **PROMIS-ICO Implementation** 1. PROMIS-ICO working stakeholder meeting 2. Assess needs and PROMIS integration into mplementation blueprint PROMIS-ICO dissemination. On-site problem solving and technical support 2. Map ICO clinical workflow 2. Modify ICO clinical resources clinical workflow testing center implementation and 2. Iterative change to implementation blueprint Develop PROMIS-ICO working group . Northwestern PROMIS 2. Develop patient and data collection 2. Pilot test with scientific advancement of from patient and clinician feedback 4. Develop formal commitment 3. US and Bolivian clinician training materials PROMIS in Bolivia and 3. Train ICO staged roll-out of 3. Ongoing educational outreach and clinical implementation experts implementation leaders Formalize data collection Latin America reminders for ICO staff Obtain funding for CFIR analysis of . Patient representatives implementation timeline 4. Quality monitoring through analysis of barriers and PROMIS-ICO 5. Local ministry of health administrative data implementation facilitators stakeholders **Preparation** Sustainment/Scale **Exploration Implementation** Nov 2017 Dec 2017 Feb 2018 Mar 2018 Apr 2018 May 2018 Jun 2018 Oct 2018 Jan 2018 Jul 2018 Aug 2018 Sep 2018 Oct 2017 Nov 2018 **PROMIS**° M Northwestern Medicine®

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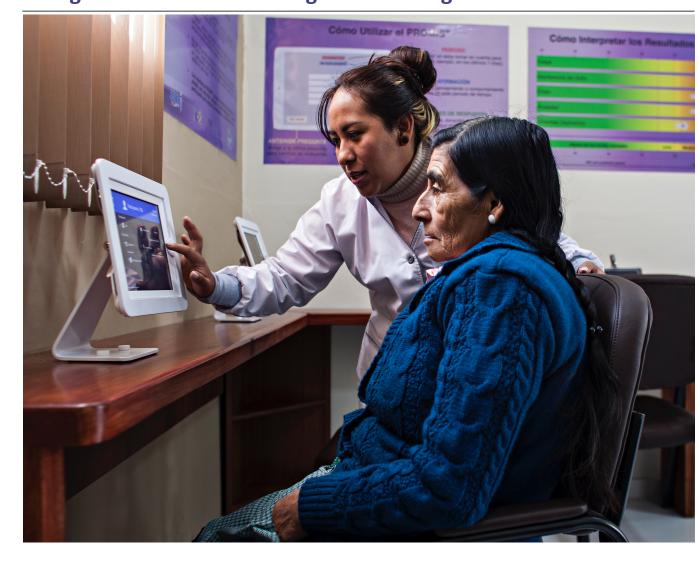
Results

- A total of 958 patients attending 1,973 clinic visits were evaluated for PROMIS® screening. 12% of clinic visits were deemed ineligible due to language barriers (n = 194), physical impairment (n = 26), or age (n = 16).
- PROMIS® was completed at 70.2% of eligible clinic visits; of these, 88.5% completed all PROMIS® domains.
- Severe symptoms of anger (9.5%), anxiety (10.8%), depression (7.1%), fatigue (2.9%), and pain interference (4.8%) were identified in this population. (Table 1)

Table 1. PROMIS® Symptom Severity in Screened ICO Patients

PROMIS® CAT	Normal (<55)	Mild (55-59)	Moderate (60-69)	Severe (>70)
Anger	43.8%	21.2%	25.7%	9.5%
Anxiety	33.8%	20.0%	35.4%	10.8%
Depression	45.4%	18.5%	29.0%	7.1%
Fatigue	67.1%	14.4%	15.6%	2.9%
Pain Interference	39.0%	25.2%	31.0%	4.8%

Image 1. PROMIS® Screening with an Indigenous Patient



Conclusions

- Multiple frameworks exist to facilitate evidence-based and sustainable implementation of patient-reported outcome assessment using PROMIS® in diverse settings.
- A structured implementation approach enables the successful application of health technologies from high-resource countries in resourceconstrained health centers.