



The Veterans Affairs Patient Reported Health Status (PROST) System: An Interim Analysis



Paul L. Hess MD, MHS^{1,2}; Dennis Plomondon, BS¹; Mary E. Plomondon, PhD^{1,2}; Maryam Nuriyeva, MPH¹; Roman Ayele, PhD¹; Carly Rohs, MA¹; Russell E. Glasgow, PhD^{1,2}; Borsika A. Rabin, PhD^{2,3}; P. Michael Ho, MD, PhD^{1,2}; and Steven M. Bradley, MD, MPH⁴
¹Rocky Mountain Regional VA Medical Center ²University of Colorado School of Medicine ³University of California San Diego ⁴Minneapolis Heart Institute

BACKGROUND

- Elective percutaneous coronary intervention (PCI) for stable angina is intended to reduce symptoms and enhance quality of life.
- Standardized measures of patient-reported outcomes (PROs) offer a valid and reproducible approach to assess health status, including symptoms, functional status, and health-related quality of life.
- Measures of patient-reported health status are not yet routinely collected or used in real-world clinical practice.

METHODS

- We developed a telephonic interactive voice response (IVR) system to collect disease-specific health status measures in the Veterans Affairs (VA) Health Care System.
- Consistent with recommendations from the International Consortium for Health Outcomes Assessment, the IVR system calls patients to collect Seattle Angina Questionnaire 7 and Rose Dyspnea questionnaire data 1 month prior to and 1 and 6 months after PCI.
- PRO reports are provided to primary care and cardiology providers for patients who experience a significant change in health status, defined as ≥ 5 -point decline in Seattle Angina Questionnaire 7 score.
- We performed a multi-method interim analysis of sequential roll-out of the IVR system at 6 VA centers from November 28, 2015, until November 5, 2020, including quantitative process data, semi-structured interviews with 13 patients; and chart review of all patients who experienced a significant decrement in health status.

RESULTS

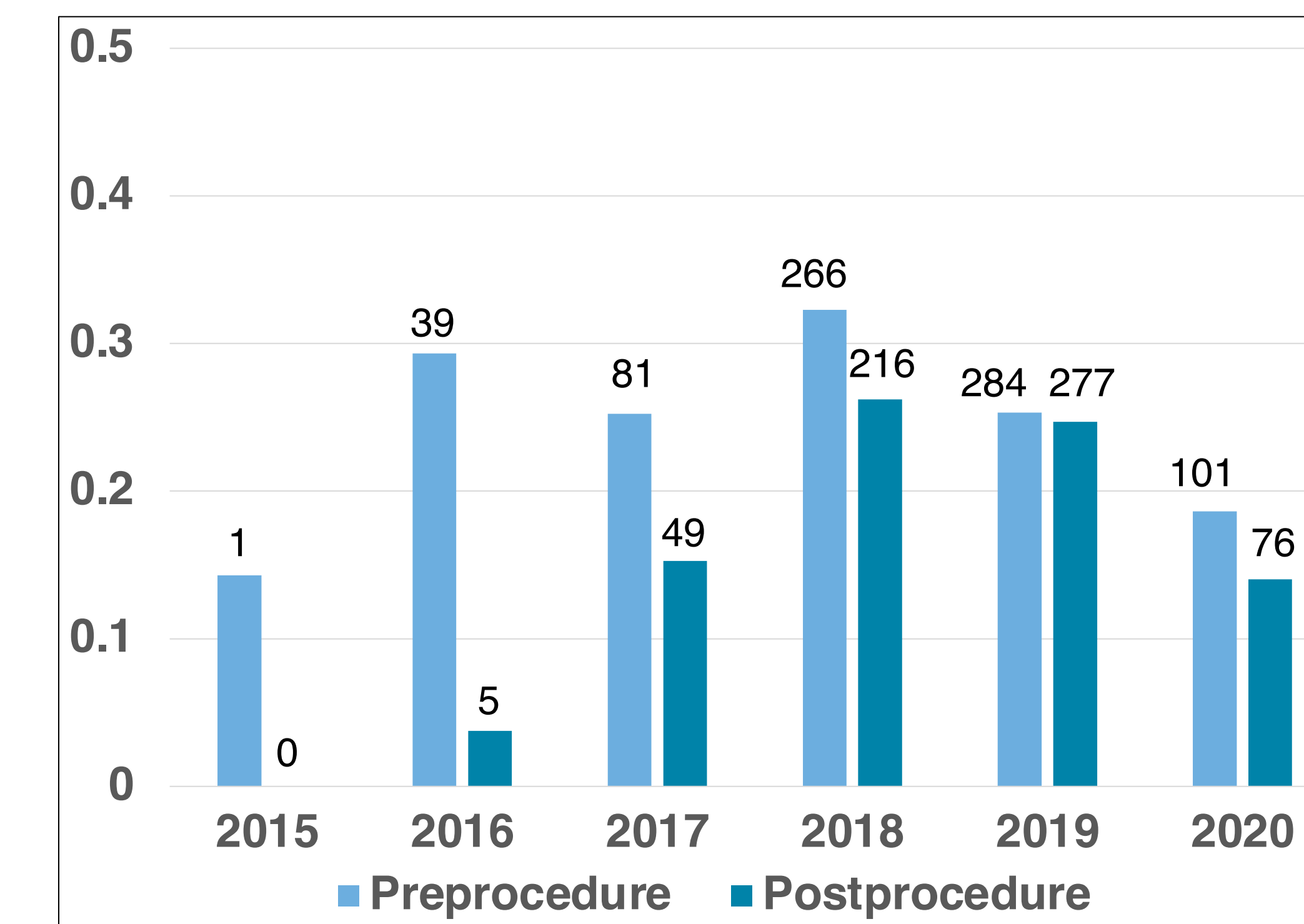
Table 1. Patient Characteristics

	Total (n=2,948)
Age, median (IQR)	69.9 (64.4-73.2)
Male sex, %	98.3
Cardiovascular comorbidities, %	
Diabetes mellitus	55.8
Peripheral vascular disease	27.1
Heart failure	26.4
Hypertension	93.0
Hyperlipidemia	92.1
Tobacco	66.9
Other comorbidities, %	
Chronic obstructive pulmonary disease	24.7
Heart failure	26.4
Chronic kidney disease	27.3
Dialysis	3.4
Depression	31.2

Table 2. Patients' Qualitative Perception of the PROST Program

- Many patients who received an IVR phone call did not remember it
- Most patients were 'fine' with receiving an IVR phone call and responding to survey questions
- Some patients expressed difficulty with survey completion owing to a lack of technical literacy or difficulty with hearing
- Some patients were reassured by a phone call, saying "That's good, because it lets me know that I haven't slipped through the cracks. It builds confidence that they know how I'm feeling before a procedure."

Figure 1. Proportion of Patient-Reported Health Status Data Collected Before and After Elective Percutaneous Coronary Intervention at 6 Cardiac Catheterization Laboratories



Of 2,948 patients undergoing elective percutaneous coronary intervention, health status data were collected from 772 (26.2%) prior to the procedure, 537 (18.2%) 1 month after the procedure, and 89 (3.0%) 6 months after the procedure.

Table 3. Clinical Responses to Notifications of Decrement in Health Status

Clinical Response	No. (n=100)
Phone call to patient	5 (5.0%)
Case review by provider	4 (4.0%)
Medication regimen review	2 (2.0%)
Clinic visit	1 (1.0%)

CONCLUSIONS

- It is feasible to capture patient-reported measures of health status in the real world and integrate their use into routine clinical care.
- Few clinical responses were triggered by notification of a decrement in health status.
- Opportunities to improve the collection and use of patient-reported health status measures persist.

DISCLOSURE

- All authors have previously received or are currently receiving salary support from the VA.

CONTACT

Paul L. Hess, MD, MHS
 Rocky Mountain Regional VA Medical Center
 Aurora, CO 80045
 paul.hess@cuanschutz.edu