

**Awareness and Diagnostic Trends of Pulmonary Hypertension (PH) Amongst U.S.-based Physicians**Gray MP<sup>1</sup>, Badesch DB<sup>2</sup>, Bull TM<sup>2</sup>, DuBrock H<sup>3</sup>, de Jesus Perez V<sup>4</sup>, Lahm T<sup>5</sup>, Leary P<sup>6</sup>, Laughlin A<sup>1</sup>, Aune R<sup>1</sup>, Brown LM<sup>7</sup><sup>1</sup>*Pulmonary Hypertension Association, Silver Spring, MD*<sup>2</sup>*University of Colorado, Aurora, CO*<sup>3</sup>*Mayo Clinic, Rochester, MN*<sup>4</sup>*Stanford University, Stanford, CA*<sup>5</sup>*Indiana University, Indianapolis, IN*<sup>6</sup>*University of Washington, Seattle, WA*<sup>7</sup>*Intermountain Healthcare, Murray, UT*

**Background:** Understanding of the awareness of the pulmonary hypertension (PH) clinical classification structure and diagnostic testing used to inform definitive diagnosis of PH amongst physicians likely to screen or treat PH patients could inform future awareness and professional education campaigns. To date, no large-scale PH awareness study in the United States has been published to highlight these educational and practice gaps.

**Methods:** A 15-minute online survey was administered to board-certified cardiologists, pulmonologists, and primary care physicians (PCP) who have been in practice for at least 1 year. Physicians were sourced from national panels and selected to be representative of overall U.S. specialties on key characteristics including type of practice, years in practice, region, sub-specialty, and patient load. Physicians were asked if they were aware of the WHO clinical classification structure. Those who indicated awareness were asked to identify the number of groups in the WHO classification system. Respondents were finally asked to indicate whether commonly used diagnostic tests were used as definitive tests, preliminary tests, or not used in PH. Data is represented as median [IQR] or mean/SD. Kruskal-Wallis statistic was used to test for significant (<0.05) differences.

**Results:** 303 physicians (102 PCPs, 101 cardiologists, and 100 pulmonologists) completed the PH Awareness Study between Feb. 15-26, 2018. PCP respondents (47.1%) were significantly less likely to be aware of the WHO PH clinical classification compared to either cardiologists or pulmonologists (96.0% and 93.0%, respectively,  $p < 0.001$ ). Of respondents stating WHO classification awareness, only 62% correctly recalled the number of WHO groups. More than two-thirds of pulmonologists and cardiologists (75% and 66%, respectively) were able to recall the correct number of WHO Groups, while PCPs were significantly less likely to recall the correct number (27%,  $p < 0.001$ ). When asked about diagnostic testing, PCPs were significantly less likely to identify right heart catheterization as a definitive test. PCPs were also significantly less likely to identify the role of chest x-ray, chest CT, CT angiography, ventilation-perfusion scan, and exercise tolerance assessment as a preliminary test in PH (Fig. 1).

**Conclusions:** Less than half of PCPs surveyed stated awareness of PH clinical classification system, and less than two-thirds of physicians stating awareness of the WHO PH clinical classification system correctly identified the number of WHO groups. Significant educational gaps were identified in all medical specialty groups surveyed regarding diagnostic tests included in expert consensus guidelines.



Figure 1.

