

### Self-Reported Pulmonary Hypertension (PH) Referral Trends Amongst U.S.-based Physicians

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**Background:** Insights into self-reported patient volumes for U.S. board-certified primary care physicians (PCPs), cardiologists, and pulmonologists could be used to inform future awareness and treatment access initiatives in the pulmonary hypertension (PH) disease state.

**Methods:** A 15-minute online survey was administered to board-certified cardiologists, pulmonologists, and PCPs who have been in practice for at least 1 year. Physicians were sourced from national panels and selected to be representative of the U.S. specialties on key characteristics including type of practice, years in practice, region, sub-specialty, and patient load. Respondents were asked to estimate the number of different PH patients they have seen over the past six months, as well as the proportions they self-manage, the proportion they refer, and to whom. 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 estimated seeing on average 10 [3-25] PH patients over the past six months. Cardiologists and pulmonologists estimated seeing significantly more PH patients on average (25 [IQR 10-75] and 20 [IQR 10-50], respectively,  $p=0.001$ ).

Only 47.3% of PCPs reported self-managing any PH patients. PCPs reported managing these patients alone 52.8% of the time. When co-managing patients with another provider, PCPs reported more frequent co-management with a pulmonologist (23.3%/29.2) than a cardiologist (15.9%/25.5). For the majority of PCPs who referred and did not continue to manage their PH patients, referrals were made more frequently to a pulmonologist (51.5%/40.5) than cardiologists (42.2%/40.7).

Cardiologist and pulmonologist respondents reported managing a significantly larger proportion of their PH patients than PCPs (70.5% and 72.2%, respectively,  $p=0.0001$ ). When referring PH patients, cardiologists reported more frequent referrals to a pulmonologist (62.5%/43.1) than a cardiologist (20.1%/35.5). Pulmonologists reported more diverse referral patterns, with a plurality of referrals to another pulmonologist (48.4%/43.6), followed by referrals to cardiologists (31.2%/40.1) and rheumatologists (10.9%/24.7).

**Conclusions:** PCP respondents to the PH awareness study reported seeing significantly fewer PH patients over the previous six months than cardiologist and pulmonologist respondents. More than half of PCP respondents report self-management of none of their PH patients, referring most frequently to a pulmonologist. Cardiologist and pulmonologist respondents report different referral patterns for the proportion of patients not self-managed, with cardiologists referring most patients to a pulmonologist, and pulmonologists referring a plurality of patients to another pulmonologist.

