Funding Sources and Costs to Deliver Cardiac Rehabilitation around the Globe: Drivers and Barriers

**Background:** Cardiac rehabilitation (CR) reach is minimal globally, primarily due to financial factors. This study characterized CR funding sources, cost to patients to participate, cost to programs to serve patients, and the drivers of these costs.

**Methods:** In this cross-sectional study, an online survey was administered to CR programs globally. Cardiac associations and local champions facilitated program identification. Costs in each country were reported using purchasing power parity (PPP). Results were compared by World Bank country income classification using generalized linear mixed models.

**Results:** 111/203 (54.68%) countries in the world offer CR, of which data were collected in 93 (83.78% country response rate; N=1082 surveys, 32.0% program response rate). CR was most-often funded by public sources (n=592; 55.70%; more often in high-income countries [HICs]; p<.001), but in 60.20% (n=56) of countries patients paid some or all of the cost. Funding source significantly impacted capacity (p=.004), number of patients per exercise session (p<.001), personnel (p=.037), and functional capacity testing (p=.039). The median cost to serve 1 patient was $945.91PPP globally (Q25-Q75=438.89-1940.42). In low and middle-income countries (LMICs), exercise equipment (mean=3.49±1.24[standard deviation]/5) and stress testing (3.27±1.17/5) were perceived as the most expensive elements of CR delivery, with front-line personnel costs perceived as significantly more expensive in HICs (p=.003). Modifiable factors associated with higher program delivery costs included composition of the CR team (p=.001), stress testing (p=.002) and telemetry monitoring in HICs (p=.01), and not offering alternative models in LMICs (p=.02).
Conclusions: Too many patients are paying out-of-pocket for CR, and more public funding is needed. Lower-cost delivery approaches are imperative, and could include walk tests, task-shifting, and intensity monitoring via perceived exertion.