**Supplementary Figure 1.** Natural history stages of chronic valvular heart disease. AF, Atrial fibrillation; LV, Left ventricle; PAH, pulmonary arterial hypertension.

**Supplementary Figure 2.** Cardiac point-of-care ultrasound demonstrating slight variation of left ventricular diameter in diastole (left image) and systole (right image)
**Supplementary Figure 3.** Lung point-of-care ultrasound showing progressive congestion (B-Lines)

**Supplementary Figure 4.** A. Normal left ventricular pressure-volume curve. B. Pressure x volume curve in severe valvular heart disease. LV, left ventricle; LVEDV, left ventricular end diastolic volume; LVESV, left ventricular end systolic volume; PV, pressure-volume; SV, stroke volume. Adapted from Ahmed et al. 25