## Echocardiography protocol

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Echocardiograms should preferably be acquired with a GE machine for standardization of strain analysis. Height and weight of the patient should be registered. All echocardiograms should go along with appropriate ECG recording. At least 3 cardiac cycles should be acquired per view. For patients with atrial fibrillation, at least 5 cardiac cycles should be acquired per view. Doppler recordings should be acquired during end-expiration.

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| Parasternal long-axis view | 2D/M-Mode  Color Doppler MV/AV  2D focused on RVOT for measurement diameter |
| Parasternal RV inflow view | 2D **(figure 1A)** |
| Parasternal short-axis view |  |
| Apical level | 2D |
| Mid-papillary level | 2D (FR >55/sec) |
| MV level | 2D (also focus on basal RV, **figure 1B**)  Color Doppler MV |
| AV level | 2D  Color Doppler AV  Color Doppler PV PW RVOT  Color Doppler + CW TV  2D focused image of RVOT for measurement diameters |
| Apical 4-chamber view | 2D LV/LA 2D LV focused view (FR >55/sec), **(figure 2A)**  Color Doppler MV PW MV inflow  TDI PW medial annulus  TDI PW lateral annulus |
| Apical 5-chamber view | 2D LV/LA  Color Doppler AV  PW LVOT CW AV |
| RV-focused apical 4 chamber | 2D RV/RA  2D RV focused view (FR >55/sec) 2D Narrow-angle, RV free wall (FR>80/sec) **(figure 1C)**  M-mode tricuspid annulus TDI PW tricuspid annulus  Color Doppler + CW TV |
| Apical 2-chamber view | 2D LV/LA  2D LV focused view (FR >55/s), **(figure 2B)**  Color Doppler MV |
| Apical 3-chamber view | 2D LV/LA  2D LV focused view (FR >55/s), **(figure 2C)**  Color Doppler MV/AV |
| Apical 3D view | LV focused (FR >20) |
| Subcostal 4-chamber view | 2D |
| Subcostal vena cava inferior | 2D/M-mode (with sniff) |

Figure 1: RV-specific echo views. A = Parasternal RV-inflow view; B = RV-focused short-axis view; C = RV-focused apical 4-chamber view.

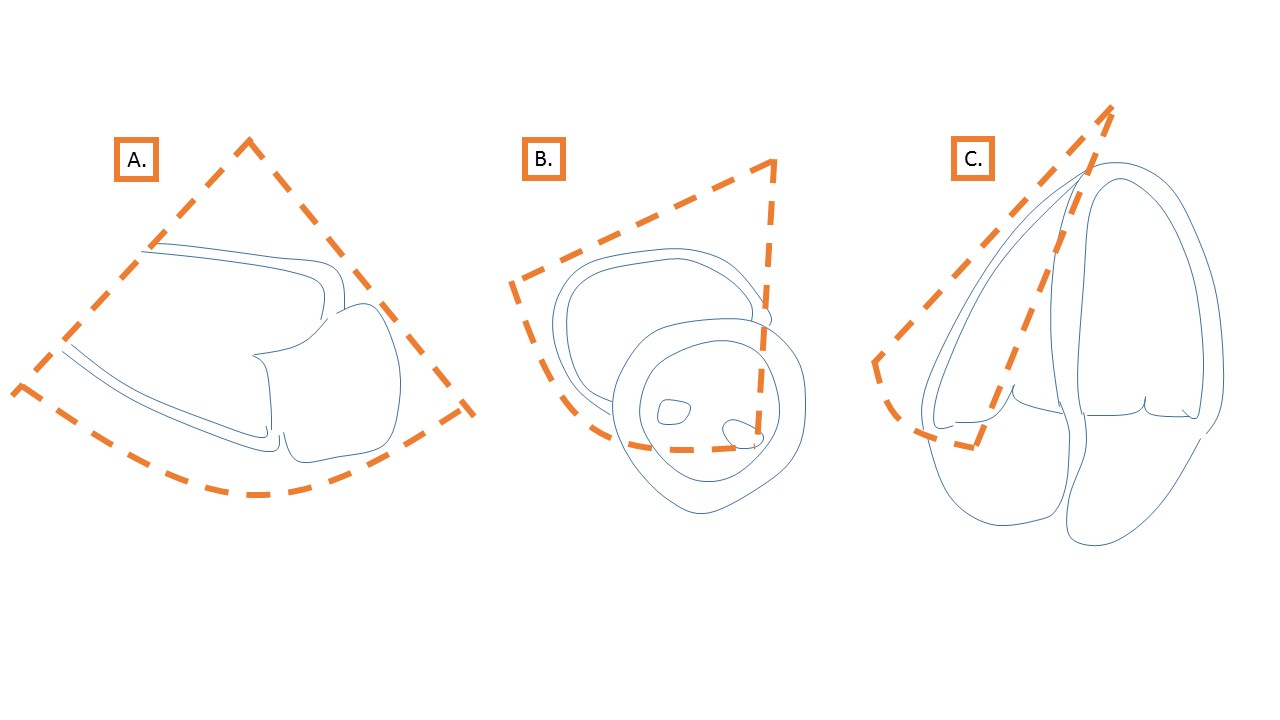


Figure 2: LV-focused echo views. A = apical 4-chamber view; B = Apical 2-chamber view; C= Apical 3-chamber view.

