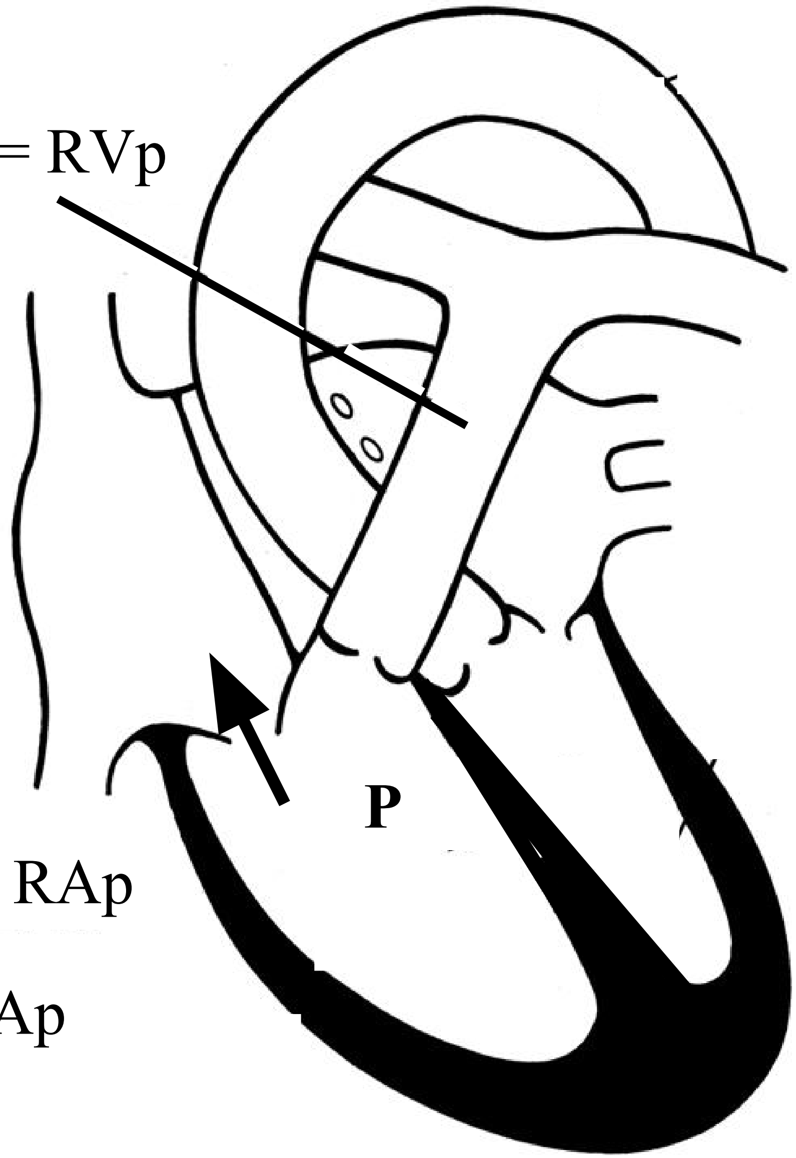
Pulmonary Artery Pressure

$$P = 4V^2$$

- Tricuspid regurgitation
  - if can obtain satisfactory signal
- Pulmonary regurgitaiton
- Ventricular septal defect
- Arterial duct

PA pressure from Tricuspid Regurgitation jet

PAp = RVp



PAp = P approx

P = RVp - RAp

RVp = P + RAp

PAP from Tricuspid Regurgitation

Measure maximum velocity from regurgitant signal

Calculate pressure drop from RV to RA

TR = RV - RA

so RV = TR + RA

Presume RA pressure is low (5-10mmHg)

RV - RA gradient approximates to RV pressure

MPA systolic pressure = RV pressure

PAP from Tricuspid Regurgitation

How do you report this?

RV = TR + RA

so could quote PAP = TR + 5 to 10 mmHg

or TR = xx mmHg

and allow clinician to use this in decision making

Depends on local preference!

PAP from Tricuspid Regurgitation

Velocity of tricuspid regurgitation gives

<u>no</u>

information on severity of the regurgitation

PAP from Pulm Regurgitant signal

PR signal = MPA - RV pressure (some time in diastole)

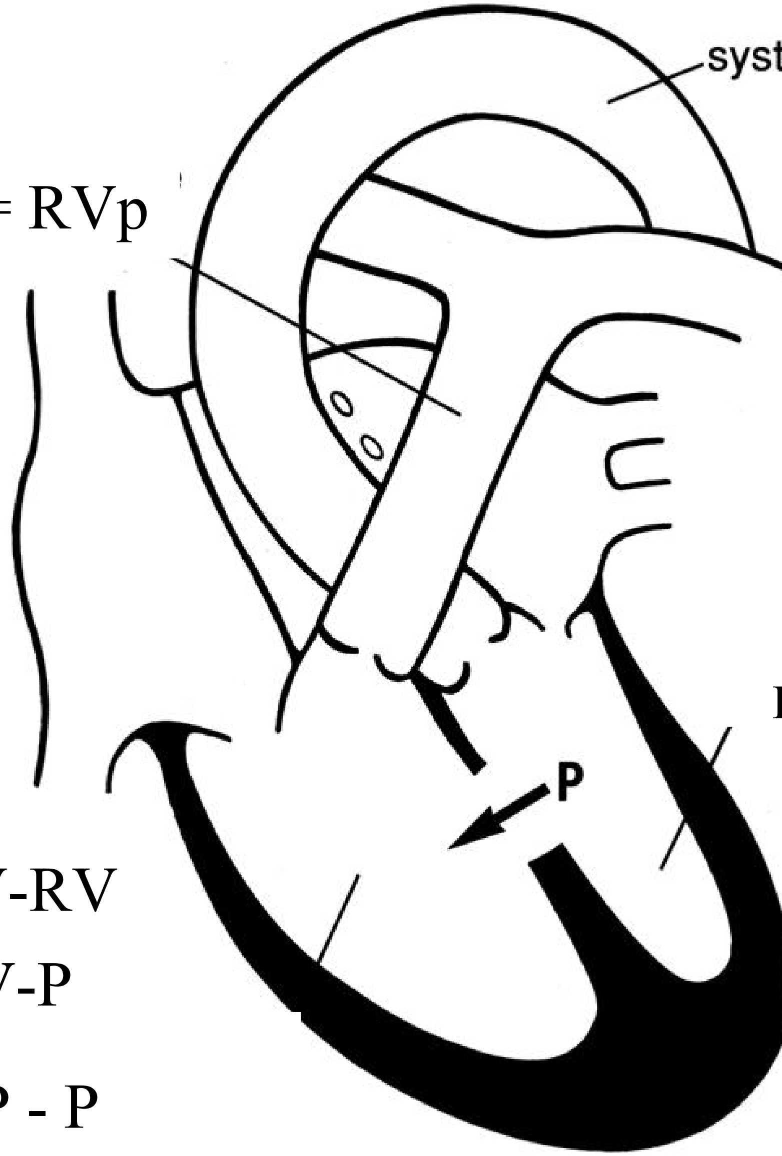
High velocity signal = high pulmonary artery pressure

Low velocity signal = low pulmonary artery pressure

Only rough estimate of diastolic pressure

Simply quote maximum pressure drop!

PA Pressure from VSD Jet



P = LV-RV

RV = LV-P

RVp = BP - P

PAP from VSD signal

Measure maximum velocity from VSD signal

Calculate pressure drop (P) from LV to RV

$$P = LV - RV$$

so $RV = LV - P$

BP approximates to LV systolic pressure

so $RV = BP - P$

MPA systolic pressure = RV pressure

PAP from VSD signal

Routinely do not try to measure BP

High velocity = low MPA systolic pressure

Low velocity = high MPA systolic pressure

PAP from PDA signal

Arterial duct signal = aorta - pulmonary artery pressure

High velocity signal = low pulmonary artery pressure

Low velocity signal = high pulmonary artery pressure

Do not measure BP - too many problems and inaccuracies!