

**Section A: KEY IDENTIFYING INFORMATION**

A1. Echocardiogram Identification Number \_\_\_\_\_ - \_\_\_\_\_ - \_\_\_\_\_  
**Replaced by blinded subject ID and visit number**

blind_id	Blinded ID
VISIT	<from REC1> Echo visit 0=Baseline 1=Norwood 2=StgII 4=14MO

A2. Date of echocardiogram \_\_\_\_\_ / \_\_\_\_\_ / \_\_\_\_\_  
M M / D D / Y Y Y Y  
**Replaced by age at Echo, days**

echo_age	A2. <created var>Age at date of Echo, days
echobsa	<created var>Haycock Body Surface Area, m <sup>2</sup>

A3. Reader Identification Number \_\_\_\_\_  
**Removed to protect privacy**

A4. Date of central reading \_\_\_\_\_ / \_\_\_\_\_ / \_\_\_\_\_  
M M / D D / Y Y Y Y

read_age	<created var>Age at date of central reading, days
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A5. Acceptable for analysis YES .....1 **(A6)** NO .....2

a. Reason not acceptable \_\_\_\_\_

ACCEPTABLE	A5. Acceptable for analysis
UNACCEPT	A5a. Reason not acceptable

A6. Image quality EXCELLENT.....1  
GOOD.....2  
FAIR.....3

IMGQUAL	A6. Image quality
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A7. Baseline (enrollment) echo YES .....1 NO .....2

BASELINE	A7. Baseline echo
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**Section B: LEFT VENTRICLE**

- B1. Left ventricle present YES ..... 1 NO .....2 (C1)
- B2. End-diastolic endocardial long axis dimension (2-D) \_\_\_\_ . \_\_\_\_ cm
- B3. End-diastolic volume (Modified Simpsons) \_\_\_\_\_ . \_\_\_\_ ml
- B4. End-systolic volume (Modified Simpsons) \_\_\_\_\_ . \_\_\_\_ ml
- B5. Ventricular mass (Modified Simpsons) \_\_\_\_\_ . \_\_\_\_ gm

CLV_PRES	B1. Left ventricle present
CLV_EDLAD2	B2. LV End-diastolic endo. long axis dimension (2D), cm
CLV_EDV_MS	B3. LV End-diastolic volume (MS), ml
CLV_ESV_MS	B4. LV End-systolic volume (MS), ml
CLV_VM_MS	B5. LV Ventricular mass (MS), gm

**Section C: RIGHT VENTRICULAR FUNCTION**

- C1. End-diastolic long axis dimension (2-D) \_\_\_\_ . \_\_\_\_ cm
- C2. End-diastolic short axis dimension (2-D) \_\_\_\_ . \_\_\_\_ cm
- C3. End-diastolic area \_\_\_\_ . \_\_\_\_ cm<sup>2</sup>
- C4. End-systolic area \_\_\_\_ . \_\_\_\_ cm<sup>2</sup>
- C5. Subcostal dimension end-diastolic LAX \_\_ . \_\_\_\_ cm
- C6. Subcostal dimension end-systolic LAX \_\_ . \_\_\_\_ cm

CRV_EDLAD2	C1. RV End-diastolic long axis dimension (2D), cm
CRV_EDSAD2	C2. RV End-diastolic short axis dimension (2D), cm
CRV_EDA	C3. RV End-diastolic area, cm <sup>2</sup>
CRV_ESA	C4. RV End-systolic area, cm <sup>2</sup>
CRV_SDD_LAX	C5. Subcostal dimension end diastolic LAX, cm
CRV_SDS_LAX	C6. Subcostal dimension end systolic LAX, cm

**Section D: AORTIC VALVE**

- D1. Aortic valve patent YES..... 1 NO .....2 (E1)
- D2. Aortic valve regurgitation YES..... 1 NO .....2 (D5)
- a. Severity MILD..... 1 (D5)
- MODERATE ..... 2

SEVERE ..... 3

- D3. Anteroposterior proximal regurgitant jet width      .      cm
- D4. Transverse proximal regurgitant jet width      .      cm
- D5. Peak velocity      .      m/sec
- D6. Mean velocity      .      m/sec
- D7. R-R interval      \_\_\_\_\_ msec

CAV_PAT	D1. Aortic valve patent
CAV_REG	D2. Aortic valve regurgitation
CAVREG_SEV	D2a. Severity
CAV_APRJW	D3. Anteroposterior proximal regurgitation jet width, cm
CAV_TPRJW	D4. Transverse proximal regurgitant jet width, cm
CAV_PV	D5. Peak velocity, m/sec
CAV_MV	D6. Mean velocity, m/sec
CAV_RRINT	D7. R-R interval, msec

**Section E: NEOAORTIC VALVE**

- E1. Neoaortic valve regurgitation      YES..... 1      NO ..... 2 **(E4)**
  - a. Severity      MILD ..... 1 **(E4)**
  - MODERATE ..... 2
  - SEVERE ..... 3
- E2. Anteroposterior proximal regurgitant jet width      .      cm
- E3. Transverse proximal regurgitant jet width      .      cm
- E4. Ejection time      \_\_\_\_\_ msec
- E5. Time velocity integral      .      cm
- E6. Anteroposterior neoaortic annulus diameter      .      cm
- E7. Transverse neoaortic annulus diameter      .      cm

CNAV_REG	E1. Neoaortic valve regurgitation
CNAV_SEV	E1a. Neoaortic valve regurgitation: Severity
CNAV_APRJW	E2. Anteroposterior proximal regurgitant jet width, cm
CNAV_TPRJW	E3. Transverse proximal regurgitant jet width, cm
CNAV_ET	E4. Ejection time, msec
CNAV_TVI	E5. Time velocity integral, cm
CNAV_ANAD	E6. Anteroposterior neoaortic annulus diameter, cm
CNAV_TNAD	E7. Transverse neoaortic annulus diameter, cm

**Section F: TRICUSPID VALVE**

- F1. Anteroposterior valve annulus diameter \_\_\_\_\_ . \_\_\_\_\_ cm
- F2. Transverse valve annulus diameter \_\_\_\_\_ . \_\_\_\_\_ cm
- F3. Tricuspid valve regurgitation YES..... 1 NO .....2 (F7)
- a. Severity MILD..... 1 (F7)

**Section F: TRICUSPID VALVE (cont.)**

- MODERATE ..... 2
- SEVERE ..... 3
- MULTIPLE ..... 4
- F4. Tricuspid leaflet prolapse YES..... 1 NO .....2
- F5. Anteroposterior proximal regurgitant jet width \_\_ . \_\_ cm
- F6. Transverse proximal regurgitant jet width \_\_ . \_\_ cm
- F7. R-R interval \_\_\_\_\_ msec
- F8. Summation wave YES ..... 1 NO .....2
- F9. Peak early velocity \_\_ . \_\_ m/sec
- F10. Peak atrial velocity \_\_ . \_\_ m/sec
- F11. Early deceleration time \_\_\_\_\_ msec
- F12. A-wave duration \_\_\_\_\_ msec
- F13. RV dP/dt \_\_\_\_\_ mmHg/sec
- F14. Ventricular flow propagation velocity \_\_\_\_\_ . \_\_ cm/sec

CTV_AVAD	F1. Anteroposterior valve annulus diameter, cm
CTV_TVAD	F2. Transverse valve annulus diameter, cm
CTV_TVREG	F3. Tricuspid valve regurgitation
CTV_TVRSEV	F3a. Severity
CTV_TLPROL	F4. Tricuspid leaflet prolapse
CTV_APRJW	F5. Anteroposterior proximal regurgitant jet width, cm
CTV_TPRJW	F6. Transverse proximal regurgitant jet width, cm
CTV_RRINT	F7. R-R interval, msec
CTV_SUMWV	F8. Summation wave
CTV_PEV	F9. Peak early velocity, m/sec
CTV_PAV	F10. Peak atrial velocity, m/sec
CTV_EDT	F11. Early deceleration time, msec
CTV_AWVDUR	F12. A-wave duration, msec
CTV_RVDPDT	F13. RV dP/dt, mmHg/sec
CTV_VFPV	F14. Ventricular flow propagation velocity, cm/sec

**Section G: RIGHT VENTRICULAR INFLOW AND OUTFLOW DOPPLER**

- G1. RV Ejection time (Doppler) \_\_\_\_\_ msec
- G2. Tricuspid valve closure time (Doppler) \_\_\_\_\_ msec
- G3. R-R interval \_\_\_\_\_ msec

CRVD_RVET	G1. RV ejection time (Doppler) , msec
CRVD_TVC	G2. Tricuspid valve closure time (Doppler) , msec
CRVD_RRI	G3. R-R interval

**Section H: PULMONARY VEIN DOPPLER**

- H1. Duration of flow reversal during atrial systole \_\_\_\_\_ msec

CPVD_FLWRV	H1. Duration of flow reversal during atrial systole, msec
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**Section I: TISSUE DOPPLER**

**Right lateral atrioventricular valve annulus velocity**

- I1. R-R interval \_\_\_\_\_ msec
- I2. Summation wave YES ..... 1 NO ..... 2
- I3. Peak atrial diastolic velocity \_\_\_\_\_ . \_\_\_\_ cm/sec

14. Peak **early** diastolic velocity \_\_\_\_\_ . \_\_\_\_ cm/sec
15. Peak systolic velocity \_\_\_\_\_ . \_\_\_\_ cm/sec
16. Ejection time \_\_\_\_\_ msec
17. Isovolumic contraction acceleration \_\_\_\_\_ cm/sec/sec
18. Onset of ICT to end of IRT \_\_\_\_\_ msec

CTD_RRINT	I1. Tissue Doppler: R-R interval, msec
CTD_SUMWV	I2. Tissue Doppler: Summation wave
CTD_PADV	I3. Tissue Doppler: Peak atrial diastolic velocity, cm/sec
CTD_PEDV	I4. Tissue Doppler: Peak early diastolic velocity, cm/sec
CTD_PSV	I5. Tissue Doppler: Peak systolic velocity, cm/sec
CTD_ET	I6. Tissue Doppler: Ejection time, msec
CTD_ISOCA	I7. Tissue Doppler Isovolumic contraction acceleration, cm/sec/sec
CTD_ICTIRT	I8. Tissue Doppler: Onset of ICT to end of IRT, msec

**Section J: AORTIC DIMENSIONS AND DOPPLER**

- J1. Native ascending aorta (applicable for baseline study only) \_\_\_\_\_ . \_\_\_\_\_ cm
- J2. Distal arch to descending aorta CWD peak velocity (applicable for non-baseline studies only) \_\_\_\_ . \_\_\_\_\_ m/sec
- J3. Descending aorta pulsed Doppler antegrade flow TVI \_\_\_\_ . \_\_\_\_\_ m
- J4. Descending aorta pulsed Doppler retrograde flow TVI \_\_\_\_ . \_\_\_\_\_ m
- J5. Narrowest distal arch diameter \_\_\_\_ . \_\_\_\_\_ cm

CADD_ASCAOR	J1. Aortic dimensions: Native ascending aorta, cm
CADD_CWDPV	J2. Aortic dimensions: Distal arch, m/sec
CADD_ANTTVI	J3. Aortic dimensions: Descending aorta antegrade, m
CADD_RETTVI	J4. Aortic dimensions: Descending aorta retrograde, m
CADD_DSTARCH	J5. Aortic dimensions: Narrowest distal arch diameter, cm

**Section K: PULMONARY ARTERY DIMENSIONS**

- K1. Left pulmonary artery \_\_\_\_\_ . \_\_\_\_\_ cm
- K2. Right pulmonary artery (proximal) \_\_\_\_\_ . \_\_\_\_\_ cm
- K3. Right pulmonary artery (distal) (**Applicable to Visit 4 ONLY**) \_\_\_\_\_ . \_\_\_\_\_ cm

CPAD_LPA	K1. Pulmonary: Left pulmonary artery, cm
CPAD_RPAP	K2. Pulmonary: Right pulmonary artery (proximal) , cm
CPAD_RPAD	K3. Pulmonary: Right pulmonary artery (distal) , cm

**Section L: ATRIAL SEPTAL DEFECT**

- L1. ASD mean Doppler gradient \_\_\_\_.\_\_\_\_ mm Hg (skip to M1. if <1m/sec)
- L2. Transverse ASD diameter \_\_\_\_.\_\_\_\_ cm
- L3. Sagittal (superior-inferior) ASD diameter \_\_\_\_.\_\_\_\_ cm

CASD_ASDMEAN	L1. Atrial septal: ASD mean Doppler gradient, mmHg
CASD_TASD	L2. Atrial septal: Transverse ASD diameter, cm
CASD_SASD	L3. Atrial septal: Sagittal ASD diameter, cm

**Section M: RIGHT VENTRICLE TO PULMONARY ARTERY CONDUIT**

- M1. Present YES ..... 1 NO ..... 2 (N1)
- a. Mid-conduit retrograde time-velocity integral \_\_\_\_.\_\_\_\_ m
- b. Mid-conduit retrograde ejection time \_\_\_\_.\_\_\_\_ msec
- c. Mid-conduit prograde time-velocity integral \_\_\_\_.\_\_\_\_ m
- d. Mid-conduit prograde ejection time \_\_\_\_.\_\_\_\_ msec
- e. R-R Interval \_\_\_\_.\_\_\_\_ msec

CRVPA_PRES	M1. Right ventricle: Present
CRVPA_TV	M1a. Right ventricle: Retrograde time-velocity integral, m
CRVPA_ET	M1b. Right ventricle: Retrograde ejection time, msec
CRVPA_PTV	M1c. Right ventricle: Prograde time-velocity, m
CRVPA_PET	M1d. Right ventricle: Prograde ejection time, msec
CRVPA_RRI	M1e. Right ventricle: R-R interval, msec

**Section N: MITRAL VALVE**

- N1. Mitral valve patent YES ..... 1 NO .....2 (O1)
- N2. Mitral valve regurgitation YES ..... 1 NO .....2 (O1)
- a. Severity MILD..... 1  
MODERATE ..... 2  
SEVERE ..... 3

CMV_PAT	N1. Mitral valve: Mitral valve patent
CMV_REG	N2. Mitral valve: Mitral valve regurgitation
CMV_REGSEV	N2a. Mitral valve: Mitral valve regurgitation: Severity

**Section O: COMMENTS**

- O1. Comments? YES ..... 1 NO .....2 (END)

COMNTYN	O1. Comments
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a. Enter comments: \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

Removed to protect privacy

**Created variables for Form R301**

lvmv	<created var> LV Mass-to volume ratio (MS)
lvef	<created var> LV Ejection fraction, % (MS)
rvareafr	<created var> RV Area fraction
rveccent	<created var> RV Eccentricity
rvedv	<created var> End-diastolic volume (Bi-plane pyramidal)
rvesv	<created var> End-systolic volume (Bi-plane pyramidal)
Rvef	<created var> Ejection fraction, % (Bi-plane pyramidal)
REDV_z	<created var> RV EDV z score
RESV_z	<created var> RV ESV z score
REF_z	<created var> RV EF z score
rvedvi	<created var> RV Indexed end diastolic volume/BSA <sup>1.3</sup>
rvedai	<created var> RV Indexed end diastolic area/BSA <sup>0.8</sup>
c_index_v	<created var> RV Cardiac index to BSA by volume assessment
avprja	<created var> Aortic valve Proximal regurgitant jet area, mm <sup>2</sup>



Pediatric Heart Network: Single Ventricle Reconstruction Trial

Form R301: Echocardiography Core Lab - 2D  
(Not All Variables are Shown)

avhr	<created var> Aortic valve Heart rate, bpm
nvprja	<created var> Neoaortic valve Proximal regurgitant jet area, mm2
c_index_d	<created var> Neoaortic cardiac index, L/min/m2
neo_index	<created var> Neoaortic indexed annular area/BSA
cnav_anad_z	<created var> Neoaortic AP valve annulus diameter z-score
neo_area_z	<created var> Neoaortic annular area z score(normalized using aortic annular area regressions)
ctv_avad_z	<created var> Tricuspid anteroposterior valve annulus diameter z score
ctv_tvad_z	<created var> Tricuspid transverse valve annulus diameter z score
ap_jw	<created var> Tricuspid regurgitation proximal jet width I
transv_jw	<created var> Tricuspid regurgitation proximal jet width II
tvvaa	<created var> Tricuspid Valve annulus area, mm2
tvvaa_index	<created var> Tricuspid Valve indexed annular area/BSA
tvvaa_z	<created var> Tricuspid Valve annular area z score
tvprja	<created var> Tricuspid Valve proximal regurgitant jet area, mm2
rvhr	<created var> RV Doppler Heart rate, bpm
rvted	<created var> RV Tei index
inflow_et	<created var> RV Doppler MPI, Inflow Doppler/ET calculation
tdhr	<created var> Tissue Doppler: Heart rate, bpm
tdtei	<created var> Tissue Doppler: Tei index
tdtei_z	<created var> Tissue Doppler: Tei index z-score
dti	<created var> Tissue Doppler MPI DTI calculation
neo_fraction	<created var> Neoaortic retrograde fraction
cadd_ascaor_z	<created var> Aortic dimensions: Native ascending aorta z score
pa_left_z	<created var> Left pulmonary artery diameter, z-score
pa_right_z	<created var> Right pulmonary artery diameter, z-score
rvpa_fraction	<created var> RVPA conduit regurgitation fraction
rvpa_neo_et	<created var> RVPA conduit ET/neoaortic ET
sftime_r	<created var> RVPA Systolic/diastolic time ratio
earatio	<created var> E/A ratio
eeratio	<created var> E/E' ratio
rvisovtime	<created var> RV Isovolumic time (msec)
rvivt_rvpa	<created var> RV Isovolumic time using mid-conduit times