American College of Cardiology
APPROPRIATE USE CRITERIA

Appropriate Use Criteria for Multimodality Imaging During the Follow-Up Care of Patients with Congenital Heart Disease

GUIDELINE MAPPING AND REFERENCES

Note to Rating Panelists:

Within each table are abbreviated titles for guidelines, expert consensus statements, society recommendations, and cohort studies, with a citation afterwards and full reference listed at the end of this document. Included below each table are additional references such as review articles and device recommendations for further background information.

Table 1: Patent Foramen Ovale (PFO), Atrial Septal Defects (ASD), and Partial Anomalous Pulmonary Venous Connection (PAPVC)

Patent Foramen Ovale		Level of Evidence	TTE	TTE + Saline	TEE	MRI	CT
1.	Routine surveillance of an asymptomatic patient with a PFO		None				
Atrial Septal Defects							
Unrepaired		**Level of Evidence**	**TTE**	**TTE + Saline**	**TEE**	**MRI**	**CT**
2.	Routine surveillance (1-2 years) in an asymptomatic patient with a small ASD or PAPVC involving a single pulmonary vein		None				
3.	Routine surveillance (3-5 years) in an asymptomatic patient with a small ASD or PAPVC involving a single pulmonary vein		None				
4.	Routine surveillance (1-2 years) in an asymptomatic patient with ≥ moderate ASD or PAPVC involving more than one pulmonary vein		None				
5.	Evaluation due to change in clinical status and/or new concerning signs or symptoms		ACC/AHA ACHD Guidelines (2018): 4.1.1 -- Stout, et al. (1) AEPC/EACVI Expert Consensus Paper: Indications for CMR in Children with Congenital and Acquired Heart Disease (2015) -- Valsangiacomo Buechel, et al. (2) ESC Recommendations for CMR in Adults with CHD (2010) -- Kilner, et al. (3) ASE Indications and Guidelines for Performance of TEE in the Patient with Pediatric Acquired or CHD (2005) -- Ayres, et al. (4)				

			CCS Consensus Conference on Management of Adults with CHD: Shunt Lesions (2009) -- Silversides, et al. (5) ACCF/SCCT/ACR/AHA/ASE/ASNC/NASCI/SCAI/SCMR AUC for Cardiac CT (2010): Table 7 -- Taylor, et al. (6)				
6.	Evaluation to determine the method of closure of isolated secundum ASD		See above				
7.	Evaluation prior to planned repair of sinus venosus defect and/or PAPVC		See above				
Post-procedural: Surgical or Catheter-based		**Level of Evidence**	**TTE**	**TTE + Saline**	**TEE**	**MRI**	**CT**
8.	Routine post-procedural evaluation (within 30 days)	C	ACC/AHA ACHD Guidelines (2008): Section 2.6 -- Warnes, et al. (7)				
9.	Evaluation due to change in clinical status and/or new concerning signs or symptoms		ACC/AHA ACHD Guidelines (2018): 4.1.1 -- Stout, et al. (1) ASE Indications and Guidelines for Performance of TEE in the Patient with Pediatric Acquired or CHD (2005) -- Ayres, et al. (4) CCS Consensus Conference on Management of Adults with CHD: Shunt Lesions (2009) -- Silversides, et al. (5) ACCF/SCCT/ACR/AHA/ASE/ASNC/NASCI/SCAI/SCMR AUC for Cardiac CT (2010): Table 7 -- Taylor, et al. (6)				
10.	Routine surveillance within 1 week following device closure of ASD in an asymptomatic patient with no or mild sequelae	C	ACC/AHA ACHD Guidelines (2008): Section 2.6 -- Warnes, et al. (7)				
11.	Routine surveillance at 1 month following device closure of ASD in an asymptomatic patient with no or mild sequelae		See above				
12.	Routine surveillance at 3-6 months following device closure of ASD in an asymptomatic patient with no or mild sequelae		See above				
13.	Routine surveillance at 1 year following device closure of ASD in an asymptomatic patient with no or mild sequelae		See above				

14.	Routine surveillance (2-5 years) after the first year following device closure of ASD in an asymptomatic patient with no or mild sequelae		ACC/AHA ACHD Guidelines (2018): 4.1.1 -- Stout, et al. (1)
15.	Routine surveillance within a year following surgical ASD closure or PAPVC repair in an asymptomatic patient with no or mild sequelae		None
16.	Routine surveillance (annually) after the first year following surgical ASD closure or PAPVC repair in an asymptomatic patient with no or mild sequelae		None
17.	Routine surveillance (2-5 years) after the first year following surgical ASD closure or PAPVC repair in an asymptomatic patient with no or mild sequelae		ACC/AHA ACHD Guidelines (2018): 4.1.1 -- Stout, et al. (1)
18.	Routine surveillance (3 to 12 months) following surgical or device closure of ASD in a patient with significant residual shunt, valvular or ventricular dysfunction, arrhythmias, and/or pulmonary hypertension		See above
19.	Routine surveillance (3 to 12 months) following repair of PAPVC in a patient with systemic or pulmonary venous obstruction, valvular or ventricular dysfunction, arrhythmias, and/or pulmonary hypertension		See above

Table 1 Additional Resources:

Amplatzer Multifenestrated Septal Occluder - "Cribriform": Instructions for Use. Available at: https://manuals.sjm.com/Search-Form?re=North-America&cc=US&ln=EN&qry=Amplatzer%20Cribriform&ipp=10. Accessed: July 17, 2018.

Amplatzer PFO Occluder: Instructions for Use. Available at: https://manuals.sjm.com/Search-Form?re=North-America&cc=US&ln=EN&qry=Amplatzer%20PFO%20Occluder&ipp=10. Accessed: July 17, 2018.

Amplatzer Septal Occluder and Delivery System: Instructions for Use. Available at: https://manuals.sjm.com/Search-Form?re=North-America&cc=US&ln=EN&qry=Amplatzer+Septal+Occluder&ipp=10&Page=1. Accessed: July 17, 2018.

Fratz S, Chung T, Greil GF, et al. Guidelines and protocols for cardiovascular magnetic resonance in children and adults with congenital heart disease: SCMR expert consensus group on congenital heart disease. J Cardiovasc Magn Reson. 2013; 15:51.

Gore Cardioform Septal Occluder: Instructions for Use. Available at: https://www.goremedical.com/products/cardioform---ifu/instructions. Accessed: July 17, 2018.

Silvestry FE, Cohen MS, Armsby LB, et al. Guidelines for the Echocardiographic Assessment of Atrial Septal Defect and Patent Foramen Ovale: From the American Society of Echocardiography and Society for Cardiac Angiography and Interventions. J Am Soc Echocardiogr. 2015; 28:910-58.

Table 2: Ventricular Septal Defects (VSD)

Unrepaired		Level of Evidence	TTE	TEE	MRI	CT
20.	Routine surveillance (annually) in an asymptomatic child with a small muscular VSD		None			
21.	Routine surveillance (2-5 years) in an asymptomatic child with a small muscular VSD		None			
22.	Routine surveillance (2-5 years) in an asymptomatic adult with a small muscular VSD		None			
23.	Routine surveillance (1-2 years) in an asymptomatic patient with a small VSD in a location other than muscular septum		None			
24.	Routine surveillance (3-5 year(s)) in an asymptomatic adult with a small VSD in a location other than muscular septum		None			
25.	Routine surveillance (1-3 months) in an infant with ≥ moderate VSD on medical management		None			

26.	Evaluation due to change in clinical status and/or new concerning signs or symptoms		ACC/AHA ACHD Guidelines (2018): Section 4.1.3 -- Stout, et al. (1) AEPC/EACVI Expert Consensus Paper: Indications for CMR in Children with Congenital and Acquired Heart Disease (2015) -- Valsangiacomo Buechel, et al. (2) ESC Recommendations for CMR in Adults with CHD (2010) -- Kilner, et al. (3) ASE Indications and Guidelines for Performance of TEE in the Patient with Pediatric Acquired or CHD (2005) -- Ayres, et al. (4) SCCT CT Imaging in Patients with CHD Part 1 (2015): Section 2.5 -- Han, et al. (8) CCS Consensus Conference on Management of Adults with CHD: Shunt Lesions (2009) -- Silversides, et al. (5) ACCF/SCCT/ACR/AHA/ASE/ASNC/NASCI/SCAI/SCMR AUC for Cardiac CT (2010): Table 7 -- Taylor, et al. (6)			
27.	Evaluation prior to planned repair		See above			
Post-procedural: Surgical or Catheter-based		**Level of Evidence**	**TTE**	**TEE**	**MRI**	**CT**
28.	Routine post-procedural evaluation (within 30 days)		None			
29.	Evaluation due to change in clinical status and/or new concerning signs or symptoms		ACC/AHA ACHD Guidelines (2018): Section 4.1.3 -- Stout, et al. (1) ASE Indications and Guidelines for Performance of TEE in the Patient with Pediatric Acquired or CHD (2005) -- Ayres, et al. (4) SCCT CT Imaging in Patients with CHD Part 1 (2015): Section 2.5 -- Han, et al. (8) CCS Consensus Conference on Management of Adults with CHD: Shunt Lesions (2009) -- Silversides, et al. (5) ACCF/SCCT/ACR/AHA/ASE/ASNC/NASCI/SCAI/SCMR AUC for Cardiac CT (2010): Table 7 -- Taylor, et al. (6)			

30.	Routine surveillance within a year following surgical or device VSD closure in an asymptomatic patient with no or mild sequelae	C	ACC/AHA ACHD Guidelines (2008): Section 3.6 -- Warnes, et al. (7) CCS Consensus Conference on Management of Adults with CHD: Shunt Lesions (2009) -- Silversides, et al. (5)
31.	Routine surveillance (2-3 years) after the first year following device closure of VSD in an asymptomatic patient with no or mild sequelae		ACC/AHA ACHD Guidelines (2018): Section 4.1.3 -- Stout, et al. (1)
32.	Routine surveillance (annually) after the first year following surgical VSD closure in an asymptomatic patient with no or mild sequelae		None
33.	Routine surveillance (2-3 years) after the first year following surgical VSD closure in an asymptomatic patient with no or mild sequelae		ACC/AHA ACHD Guidelines (2018): Section 4.1.3 -- Stout, et al. (1)
34.	Routine surveillance (2-3 years) following surgical or device closure in a patient with small residual shunt, ≤ mild valvular dysfunction, no ventricular dysfunction, arrhythmias or pulmonary hypertension		See above
35.	Routine surveillance (3 to 12 months) following surgical or device closure in a patient with significant residual shunt, valvular or ventricular dysfunction, arrhythmias, and/or pulmonary hypertension		See above

Table 2 Additional Resources:

American College of Cardiology Foundation Task Force on Expert Consensus D, Hundley WG, Bluemke DA, et al. ACCF/ACR/AHA/NASCI/SCMR 2010 expert consensus document on cardiovascular magnetic resonance: a report of the American College of Cardiology Foundation Task Force on Expert Consensus Documents. J Am Coll Cardiol. 2010; 55:2614-62.

Table 3: Atrioventricular Septal Defects (AVSD)

Unrepaired: Partial/Transitional		**Level of Evidence**	**TTE**	**TEE**	**MRI**	**CT**
36	Routine surveillance (3-6 months) in an asymptomatic infant		None			
37	Routine surveillance (1-2 years) in an asymptomatic child		None			
Unrepaired: Complete		**Level of Evidence**	**TTE**	**TEE**	**MRI**	**CT**
38	Routine surveillance (1-3 months) in an infant		None			
Unrepaired: All Types		**Level of Evidence**	**TTE**	**TEE**	**MRI**	**CT**
39	Evaluation due to change in clinical status and/or new concerning signs or symptoms		ACC/AHA ACHD Guidelines (2018): Section 4.1.4 -- Stout, et al. (1) AEPC/EACVI Expert Consensus Paper: Indications for CMR in Children with Congenital and Acquired Heart Disease (2015) -- Valsangiacomo Buechel, et al. (2) ESC Recommendations for CMR in Adults with CHD (2010) -- Kilner, et al. (3) ASE Indications and Guidelines for Performance of TEE in the Patient with Pediatric Acquired or CHD (2005) -- Ayres, et al. (4) SCCT CT Imaging in Patients with CHD Part 1 (2015): Section 2.5 -- Han, et al. (8) CCS Consensus Conference on Management of Adults with CHD: Shunt Lesions (2009) -- Silversides, et al. (5) ACCF/SCCT/ACR/AHA/ASE/ASNC/NASCI/SCAI/SCMR AUC for Cardiac CT (2010): Table 7 -- Taylor, et al. (6)			
40	Evaluation prior to planned repair		See above			
Post-operative		**Level of Evidence**	**TTE**	**TEE**	**MRI**	**CT**

41	Routine post-procedural evaluation (within 30 days)		None
42	Evaluation due to change in clinical status and/or new concerning signs or symptoms		ACC/AHA ACHD Guidelines (2018): Section 4.1.4 -- Stout, et al. (1) AEPC/EACVI Expert Consensus Paper: Indications for CMR in Children with Congenital and Acquired Heart Disease (2015) -- Valsangiacomo Buechel, et al. (2) ESC Recommendations for CMR in Adults with CHD (2010) -- Kilner, et al. (3) ASE Indications and Guidelines for Performance of TEE in the Patient with Pediatric Acquired or CHD (2005) -- Ayres, et al. (4) SCCT CT Imaging in Patients with CHD Part 1 (2015): Section 2.5 -- Han, et al. (8) CCS Consensus Conference on Management of Adults with CHD: Shunt Lesions (2009) -- Silversides, et al. (5) PACES/HRS Expert Consensus Statement on the Recognition and Management of Arrhythmias in ACHD (2014): Section 5.3.3 -- Khairy, et al. (9)
43	Routine surveillance within a year after AVSD repair in an asymptomatic patient with no or mild sequelae		None
44	Routine surveillance (1-3 year(s)) after the first year following repair in an asymptomatic patient with no or mild sequelae		ACC/AHA ACHD Guidelines (2018): Section 4.1.4 -- Stout, et al. (1)
45	Routine surveillance (3-12 months) in a patient with significant residual shunt, valvular or ventricular dysfunction, LVOT obstruction, arrhythmias, and/or pulmonary hypertension		See above
46	Routine surveillance (3-12 months) in a patient with heart failure symptoms		ACCF/AHA Guideline for the Management of Heart Failure (2013) -- Yancy, et al. (10)

Table 3 Additional Resources:

Dillman JR, Hernandez RJ. Role of CT in the evaluation of congenital cardiovascular disease in children. AJR Am J Roentgenol. 2009; 192:1219-31.

Fratz S, Chung T, Greil GF, et al. Guidelines and protocols for cardiovascular magnetic resonance in children and adults with congenital heart disease: SCMR expert consensus group on congenital heart disease. J Cardiovasc Magn Reson. 2013; 15:51.

Table 4: Patent Ductus Arteriosus (PDA)

Unrepaired		Level of Evidence	TTE	MRI	CT
47.	Routine surveillance (3-5 years) in an asymptomatic patient with a trivial, silent PDA		None		
48.	Routine surveillance (3-6 months) in an infant with ≥ moderate PDA		None		
49.	Routine surveillance (3-6 months) in an infant or child with a small, audible PDA until closure		None		
50.	Routine surveillance (1-2 years) in an infant or child with a small, audible PDA until closure		None		
51.	Routine surveillance (3-5 years) in an adult with a small PDA		ACC/AHA ACHD Guidelines (2018): Section 4.1.5 -- Stout, et al. (1)		
52.	Evaluation due to change in clinical status and/or new concerning signs or symptoms		See above + SCCT CT Imaging in Patients with Congenital Heart Disease Part 1 (2015) – Han, et al. (8) AEPC/EACVI Expert Consensus Paper: Indications for CMR in Children with Congenital and Acquired Heart Disease (2015) -- Valsangiacomo Buechel, et al. (2) ESC Recommendations for CMR in Adults with CHD (2010) -- Kilner, et al. (3)		

			CCS Consensus Conference on Management of Adults with CHD: Shunt Lesions (2009) -- Silversides, et al. (5)
53.	Evaluation prior to planned repair		See above

Post-procedural: Surgery or Catheter-based		Level of Evidence	TTE	TEE	MRI	CT	Lung Scan
54.	Routine post-procedural evaluation (within 30 days)		None				
55.	Evaluation due to change in clinical status and/or new concerning signs or symptoms		ACC/AHA ACHD Guidelines (2018): Section 4.1.5 -- Stout, et al. (1) SCCT CT Imaging in Patients with Congenital Heart Disease Part 1 (2015) – Han, et al. (8) AEPC/EACVI Expert Consensus Paper: Indications for CMR in Children with Congenital and Acquired Heart Disease (2015) -- Valsangiacomo Buechel, et al. (2) ESC Recommendations for CMR in Adults with CHD (2010) -- Kilner, et al. (3) CCS Consensus Conference on Management of Adults with CHD: Shunt Lesions (2009) -- Silversides, et al. (5)				
56.	Routine surveillance (annually) within 2 years following PDA closure in an asymptomatic patient with no or mild sequelae		None				
57.	Routine surveillance (5 years) after the first 2 years following surgical closure in an asymptomatic patient with no or mild sequelae		ACC/AHA ACHD Guidelines (2008): Section 5.6 -- Warnes, et al. (7) CCS Consensus Conference on Management of Adults with CHD: Shunt Lesions (2009) -- Silversides, et al. (5)				
58.	Routine surveillance (5 years) after the first 2 years following device closure in an asymptomatic patient with no or mild sequelae		See above				

59.	Routine surveillance (1-2 years) in a patient with post-procedural left pulmonary artery stenosis		None
60.	Routine surveillance (1-2 years) in a patient with post-procedural aortic obstruction		None

Table 4 Additional Resources:

Amplatzer Duct Occluder and Delivery System: Instructions for Use.
Available at: https://manuals.sjm.com/Search-Form?re=North-America&cc=US&ln=EN&fam=49a84173-ce9d-44d9-82ab-3e293c2cbadc&cat=71260c89-7cb8-475d-950b-0262191e7526&seg=dd28d64f-7d0b-4660-aa2c-da987bb7894c&qry=Amplatzer%20Duct%20Occluder&ipp=10. Accessed: July 17, 2018.

Table 5: Total Anomalous Pulmonary Venous Connection (TAPVC)

Unrepaired		Level of Evidence	TTE	TEE	MRI	CT
61.	Evaluation due to change in clinical status and/or new concerning signs or symptoms		SCCT CT Imaging in Patients with CHD Part 1 (2015) -- Han, et al. (8) AEPC/EACVI Expert Consensus Paper: Indications for CMR in Children with Congenital and Acquired Heart Disease (2015) -- Valsangiacomo Buechel, et al. (2) ESC Recommendations for CMR in Adults with CHD (2010) -- Kilner, et al. (3) ASE Indications and Guidelines for Performance of TEE in the Patient with Pediatric Acquired or CHD (2005) -- Ayres, et al. (4)			
62.	Evaluation prior to planned repair		SCCT CT Imaging in Patients with CHD Part 1 (2015) -- Han, et al. (8) AEPC/EACVI Expert Consensus Paper: Indications for CMR in Children with Congenital and Acquired Heart Disease (2015) -- Valsangiacomo Buechel, et al. (2) ESC Recommendations for CMR in Adults with CHD (2010) -- Kilner, et al. (3)			

Post-operative		Level of Evidence	TTE	TEE	MRI	CT	Stress Imaging	Lung Scan
63.	Routine post-procedural evaluation (within 30 days)		None					
64.	Evaluation due to change in clinical status and/or new concerning signs or symptoms		SCCT CT Imaging in Patients with CHD Part 1 (2015) -- Han, et al. (8) AEPC/EACVI Expert Consensus Paper: Indications for CMR in Children with Congenital and Acquired Heart Disease (2015) -- Valsangiacomo Buechel, et al. (2) ASE Indications and Guidelines for Performance of TEE in the Patient with Pediatric Acquired or CHD (2005) -- Ayres, et al. (4) ACCF/SCCT/ACR/AHA/ASE/ASNC/NASCI/SCAI/SCMR AUC for Cardiac CT (2010): Table 7 -- Taylor, et al. (6)					
65.	Routine surveillance (3-6 months) in an asymptomatic infant with no or mild sequelae		None					
66.	Routine surveillance (1-2 years) in an asymptomatic child with no or mild sequelae		None					
67.	Routine surveillance (3-5 years) in an asymptomatic adult with no or mild sequelae		None					

Table 5 Additional Resources:

Table 6: Eisenmenger Syndrome and Pulmonary Hypertension Associated with CHD

Eisenmenger Syndrome (ES)	Level of Evidence	TTE	MRI	CT	Stress Imaging

68.	Initial evaluation with suspicion of ES	C B C	ACC/AHA ACHD Guidelines (2018): Section 4.4.6 -- Stout, et al. (1) AHA/ATS Pediatric Pulmonary Hypertension Guidelines (2015): Section 3 -- Abman, et al. (11) ACCF/AHA Expert Consensus Document on Pulmonary Hypertension (2009): Figure 3, Section 6 -- McLaughlin, et al. (12) ESC/ERS Guidelines for the Diagnosis and Treatment of Pulmonary Hypertension (2016): Table 12 and 16 -- Galie, et al. (13) CCS Consensus Conference on Management of Adults with CHD: Complex CHD (2009) -- Silversides, et al. (14) ACCF/SCCT/ACR/AHA/ASE/ASNC/NASCI/SCAI/SCMR AUC for Cardiac CT (2010): Table 7 -- Taylor, et al. (6)
69.	Evaluation due to change in clinical status and/or new concerning signs or symptoms in a patient with ES	C B C	ACC/AHA ACHD Guidelines (2018): Section 4.4.6 -- Stout, et al. (1) AHA/ATS Pediatric Pulmonary Hypertension Guidelines (2015): Section 3 -- Abman, et al. (11) ACCF/AHA Expert Consensus Document on Pulmonary Hypertension (2009): Table 8 -- McLaughlin, et al. (12) ESC/ERS Guidelines for the Diagnosis and Treatment of Pulmonary Hypertension (2016): Table 16 -- Galie, et al. (13) CCS Consensus Conference on Management of Adults with CHD: Complex CHD (2009) -- Silversides, et al. (14)
70.	Evaluation due to change in PAH-targeted therapy in a patient with ES		See above
71.	Routine surveillance (3 months) in a stable child with ES		AHA/ATS Pediatric Pulmonary Hypertension Guidelines (2015): Section 3 -- Abman, et al. (11)

72.	Routine surveillance (6-12 months) in a stable child with ES		See above			
73.	Routine surveillance (3 months) in a stable adult with ES	C C	ACC/AHA ACHD Guidelines (2018): Section 4.4.6 -- Stout, et al. (1) ACCF/AHA Expert Consensus Document on Pulmonary Hypertension (2009): Table 8 -- McLaughlin, et al. (12) ESC/ERS Guidelines for the Diagnosis and Treatment of Pulmonary Hypertension (2016): Table 16 -- Galie, et al. (13) CCS Consensus Conference on Management of Adults with CHD: Complex CHD (2009) -- Silversides, et al. (14)			
74.	Routine surveillance (6-12 months) in a stable adult with ES		See above			
Pulmonary hypertension associated with CHD		**Level of Evidence**	**TTE**	**MRI**	**CT**	**Stress Imaging**
75.	Initial evaluation with suspicion of pulmonary hypertension following CHD surgery	C B C	ACC/AHA ACHD Guidelines (2018): Section 4.4.6 -- Stout, et al. (1) AHA/ATS Pediatric Pulmonary Hypertension Guidelines (2015): Section 3 -- Abman, et al. (11) ACCF/AHA Expert Consensus Document on Pulmonary Hypertension (2009): Figure 3, Section 6 -- McLaughlin, et al. (12) ESC/ERS Guidelines for the Diagnosis and Treatment of Pulmonary Hypertension (2016): Table 12 an 16 -- Galie, et al. (13) CCS Consensus Conference on Management of Adults with CHD: Complex CHD (2009) -- Silversides, et al. (14) ACCF/SCCT/ACR/AHA/ASE/ASNC/NASCI/SCAI/SCMR AUC for Cardiac CT (2010): Table 7 -- Taylor, et al. (6)			
76.	Evaluation due to change in clinical status and/or new concerning signs or	C B	ACC/AHA ACHD Guidelines (2018): Section 4.4.6 -- Stout, et al. (1)			

	symptoms in a patient with post-operative PH	C	AHA/ATS Pediatric Pulmonary Hypertension Guidelines (2015): Section 3 -- Abman, et al. (11) ACCF/AHA Expert Consensus Document on Pulmonary Hypertension (2009): Table 8 -- McLaughlin, et al. (12) ESC/ERS Guidelines for the Diagnosis and Treatment of Pulmonary Hypertension (2016): Table 16 -- Galie, et al. (13) CCS Consensus Conference on Management of Adults with CHD: Complex CHD (2009) -- Silversides, et al. (14)
77.	Evaluation due to change in PAH-targeted therapy in a patient with post-operative PH		See above
78.	Routine surveillance (3 months) in a stable child with post-operative PH		AHA/ATS Pediatric Pulmonary Hypertension Guidelines (2015): Section 3 -- Abman, et al. (11)
79.	Routine surveillance (6-12 months) in a stable child with post-operative PH		See above
80.	Routine surveillance (3 months) in a stable adult with post-operative PH	C	ACCF/AHA Expert Consensus Document on Pulmonary Hypertension (2009): Table 8 -- McLaughlin, et al. (12) ESC/ERS Guidelines for the Diagnosis and Treatment of Pulmonary Hypertension (2016): Table 16 -- Galie, et al. (13) CCS Consensus Conference on Management of Adults with CHD: Complex CHD (2009) -- Silversides, et al. (14)
81.	Routine surveillance (6-12 months) in a stable adult post-operative PH		See above

Table 6 Additional Resources:

Table 7: Ebstein Anomaly and Tricuspid Valve Dysplasia

Unrepaired		Level of Evidence	TTE	TTE + Saline	TEE	MRI	CT	Stress Imaging
82.	Routine surveillance (1-2 years) in an asymptomatic infant or child with mild TR		None					
83.	Routine surveillance (3-5 years) in an asymptomatic adult with mild TR		ACC/AHA AHCD Guidelines (2018): Section 4.3.4-1 -- Stout, et al. (1)					
84.	Routine surveillance (3-6 months) in an asymptomatic infant with ≥ moderate TR without hypoxemia		None					
85.	Routine surveillance (6-12 months) in an asymptomatic patient with ≥ moderate TR and previously stable RV size and/or function without hypoxemia		None					
86.	Evaluation due to change in clinical status and/or new concerning signs and symptoms	B	ASE/CMR Recommendations for Noninvasive Evaluation of Native Valvular Regurgitation (2017) -- Zoghbi, et al. (15) EAE/ASE Echocardiographic Assessment of Valve Stenosis (2009) -- Baumgartner, et al. (16) ASE Indications and Guidelines for Performance of TEE in the Patient with Pediatric Acquired or Congenital Heart Disease (2005) -- Ayres, et al. (4) CCS Consensus Conference on Management of Adults with CHD: Ebstein Anomaly (2009) -- Silversides, et al. (17) PACES/HRS Expert Consensus Statement on the Recognition and Management of Arrhythmias in ACHD (2014) -- Khairy, et al. (9)					
87.	Evaluation of an ASD for device closure in a patient with mild or moderate TR, RV enlargement and no hypoxemia	C	See Above + ACC/AHA AHCD Guidelines (2018): Sections 4.3.4-1 -- Stout, et al. (1)					

			AEPC/EACVI Expert Consensus Paper: Indications for CMR in Children with Congenital and Acquired Heart Disease (2015) -- Valsangiacomo Buechel, et al. (2) ESC Recommendations for CMR in Adults with CHD (2010) -- Kilner, et al. (3)
88.	Evaluation prior to planned repair	C	See Above + AHA/ACC Guideline for the Management of Patients with Valvular Heart Disease (2014): Section 8 -- Nishimura, et al. (18) ACCF/SCT/ACR/ASE/ASNC/SCAI/SCMR AUC for Cardiac CT (2010): Table 7 -- Taylor, et al. (6)

Post-operative		Level of Evidence	TTE	TTE + Saline	TEE	MRI	CT	Stress Imaging
89.	Routine post-procedural evaluation (within 30 days)		None					
90.	Evaluation due to change in clinical status and/or new concerning signs or symptoms	B	ASE/CMR Recommendations for Noninvasive Evaluation of Native Valvular Regurgitation (2017) -- Zoghbi, et al. (15) EAE/ASE Echocardiographic Assessment of Valve Stenosis (2009) -- Baumgartner, et al. (16) ASE Indications and Guidelines for Performance of TEE in the Patient with Pediatric Acquired or Congenital Heart Disease (2005) -- Ayres, et al. (4) CCS Consensus Conference on Management of Adults with CHD: Ebstein Anomaly (2009) -- Silversides, et al. (17) PACES/HRS Expert Consensus Statement on the Recognition and Management of Arrhythmias in ACHD (2014) -- Khairy, et al. (9)					
91.	Routine surveillance (1-2 years) in an asymptomatic patient with no or mild sequelae		CCS Consensus Conference on Management of Adults with CHD: Ebstein Anomaly (2009) -- Silversides, et al. (17)					

92.	Routine surveillance (3-5 years) in an asymptomatic patient with no or mild sequelae	C	See Above + ACC/AHA AHCD Guidelines (2018): Section 4.3.4-1 -- Stout, et al. (1)
93.	Routine surveillance (6-12 months) in an asymptomatic child with valvular or ventricular dysfunction or arrhythmia		None
94.	Routine surveillance (1-2 years) in an asymptomatic adult with valvular or ventricular dysfunction or arrhythmias	B C	ASE/CMR Recommendations for Noninvasive Evaluation of Native Valvular Regurgitation (2017) -- Zoghbi, et al. (15) EAE/ASE Echocardiographic Assessment of Valve Stenosis (2009) -- Baumgartner, et al. (16) ASE Indications and Guidelines for Performance of TEE in the Patient with Pediatric Acquired or Congenital Heart Disease (2005) -- Ayres, et al. (4) CCS Consensus Conference on Management of Adults with CHD: Ebstein Anomaly (2009) -- Silversides, et al. (17) PACES/HRS Expert Consensus Statement on the Recognition and Management of Arrhythmias in ACHD (2014) -- Khairy, et al. (9) ACC/AHA AHCD Guidelines (2018): Section 4.3.4 -- Stout, et al. (1) AHA/ACC Guideline for the Management of Patients with Valvular Heart Disease (2014): Section 8 -- Nishimura, et al. (18)
95.	Routine surveillance (3-12 months) in a patient with symptoms of heart failure and/or atrial arrhythmias	C	ACC/AHA AHCD Guidelines (2018): Section 4.3.4 -- Stout, et al. (1) ACCF/AHA Guideline for the Management of Heart Failure (2013): Section 5 and 6 -- Yancy, et al. (10)

Table 7 Additional Resources:

American College of Cardiology Foundation Task Force on Expert Consensus D, Hundley WG, Bluemke DA, et al. ACCF/ACR/AHA/NASCI/SCMR 2010

expert consensus document on cardiovascular magnetic resonance: a report of the American College of Cardiology Foundation Task Force on Expert Consensus Documents. J Am Coll Cardiol. 2010; 55:2614-62.

Fratz S, Chung T, Greil GF, et al. Guidelines and protocols for cardiovascular magnetic resonance in children and adults with congenital heart disease: SCMR expert consensus group on congenital heart disease. J Cardiovasc Magn Reson. 2013; 15:51.

Kirk R, Dipchand AI, Rosenthal DN, et al. The International Society for Heart and Lung Transplantation Guidelines for the management of pediatric heart failure: Executive summary. [Corrected]. J Heart Lung Transplant. 2014; 33:888-909. *(see Chapter 5)*

Silvestry FE, Cohen MS, Armsby LB, et al. Guidelines for the Echocardiographic Assessment of Atrial Septal Defect and Patent Foramen Ovale: From the American Society of Echocardiography and Society for Cardiac Angiography and Interventions. J Am Soc Echocardiogr. 2015; 28:910-58.

Table 8: Pulmonary Stenosis (PS)

Unrepaired		Level of Evidence	TTE	TEE	MRI	CT	Stress Imaging
96.	Routine surveillance (1-4 weeks) in an asymptomatic infant with PS		None				
97.	Routine surveillance (3-6 months) in an asymptomatic infant with mild PS		None				
98.	Routine surveillance (1-2 years) in an asymptomatic child with mild PS		None				
99.	Routine surveillance (3-5 years) in an asymptomatic adult with mild PS	C	ACC/AHA ACHD Guidelines (2008): Section 7.5 -- Warnes, et al. (7) CCS Consensus Conference on Management of Adults with CHD: Outflow Tract Obstruction (2009) -- Silversides, et al. (17)				
100.	Routine surveillance (3-6 months) in an asymptomatic infant with ≥ moderate PS		None				
101.	Routine surveillance (1-2 years) in an asymptomatic child or adult with ≥ moderate PS		None				

102.	Routine surveillance (3-5 years) in an asymptomatic adult with PS and pulmonary artery dilation		None
103.	Evaluation due to change in clinical status and/or new concerning signs or symptoms	C	ACC/AHA ACHD Guidelines (2008): Section 7.5 -- Warnes, et al. (7) AEPC/EACVI Expert Consensus Paper: Indications for CMR in Children with Congenital and Acquired Heart Disease (2015) -- Valsangiacomo Buechel, et al. (2) ESC Recommendations for CMR in Adults with CHD (2010) -- Kilner, et al. (3) ASE Indications and Guidelines for Performance of TEE in the Patient with Pediatric Acquired or CHD (2005) -- Ayres, et al. (4) SCCT CT Imaging in Patients with CHD Part 1 (2015): Section 2.11 – Han, et al. (8) CCS Consensus Conference on Management of Adults with CHD: Outflow Tract Obstruction (2009) -- Silversides, et al. (17) ISHLT Guidelines for the Management of Pediatric Heart Failure (2014): Section 5.3 -- Kirk, et al. (19) ACCF/AHA Guideline for the Management of Heart Failure (2013): Section 6.4 -- Yancy, et al. (10)
104.	Evaluation prior to planned repair		See above

Post-procedural: Surgical or Catheter-based		**Level of Evidence**	**TTE**	**TEE**	**MRI**	**CT**	**Stress Imaging**
105.	Routine post-procedural evaluation (within 30 days)		None				
106.	Evaluation due to change in clinical status and/or new concerning signs or symptoms	C	ACC/AHA ACHD Guidelines (2018): Section 4.3.1.1 Table 23, Figure 3 – Stout, et al. (1)				

		B, C B, C	ASE/SCMR Recommendations for Noninvasive Evaluation of Native Valvular Regurgitation (2017) -- Zoghbi, et al. (15) AEPC/EACVI Expert Consensus Paper: Indications for CMR in Children with Congenital and Acquired Heart Disease (2015) -- Valsangiacomo Buechel, et al. (2) ESC Recommendations for CMR in Adults with CHD (2010) -- Kilner, et al. (3) ASE Indications and Guidelines for Performance of TEE in the Patient with Pediatric Acquired or CHD (2005) -- Ayres, et al. (4) SCCT CT Imaging in Patients with CHD Part 1 (2015) -- Han, et al. (8) ISHLT Guidelines for the Management of Pediatric Heart Failure (2014): Section 5.3 -- Kirk, et al. (19) ACCF/AHA Guideline for the Management of Heart Failure (2013): Section 6.4 -- Yancy, et al. (10) CCS Consensus Conference on Management of Adults with CHD: Outflow Tract Obstruction (2009) -- Silversides, et al. (17)
107.	Routine surveillance (1-2 years) in an asymptomatic child with no or mild sequelae		None
108.	Routine surveillance (3-5 years) in an asymptomatic adult with no or mild sequelae	C	ACC/AHA ACHD Guidelines (2018): Section 4.3.1.1 Table 23, Figure 3 – Stout, et al. (1) CCS Consensus Conference on Management of Adults with CHD: Outflow Tract Obstruction (2009) -- Silversides, et al. (17)
109.	Routine surveillance (6-12 months) in an asymptomatic child with moderate or severe sequelae		None
110.	Routine surveillance (1-3 years) in an asymptomatic adult with moderate or severe sequelae	C	ACC/AHA ACHD Guidelines (2018): Section 4.3.1.1. Table 23, Figure 3 – Stout, et al. (1)

			CCS Consensus Conference on Management of Adults with CHD: Outflow Tract Obstruction (2009) -- Silversides, et al. (17)
111.	Routine surveillance (3-12 months) in a patient with heart failure symptoms		ACCF/AHA Guideline for the Management of Heart Failure (2013): Section 6.4 -- Yancy, et al. (10)

Table 8 Additional Resources:

Fratz S, Chung T, Greil GF, et al. Guidelines and protocols for cardiovascular magnetic resonance in children and adults with congenital heart disease: SCMR expert consensus group on congenital heart disease. J Cardiovasc Magn Reson. 2013; 15:51.

Table 9: Pulmonary Atresia with Intact Ventricular Septum (PA/IVS)

Unrepaired		**Level of Evidence**	**TTE**	**TEE**	**MRI**	**CT**	**Stress Imaging**	**Lung scan**
112.	Evaluation prior to planned repair		None					
Post-procedural: Palliation		**Level of Evidence**	**TTE**	**TEE**	**MRI**	**CT**	**Stress Imaging**	**Lung scan**
113.	Routine post-procedural evaluation (within 30 days)		None					
114.	Routine surveillance (1-3 months) in an asymptomatic patient		None					
115.	Evaluation due to change in clinical status and/or new concerning signs or symptoms		SCCT CT Imaging in Patients with CHD Part 1 (2015) -- Han, et al. (8) AEPC/EACVI Expert Consensus Paper: Indications for CMR in Children with Congenital and Acquired Heart Disease (2015) -- Valsangiacomo Buechel, et al. (2) ESC Recommendations for CMR in Adults with CHD (2010) -- Kilner, et al. (3)					
116.	Evaluation prior to planned repair		None					

Post-procedural: Complete Repair		Level of Evidence	TTE	TEE	MRI	CT	Stress Imaging	Lung scan
117.	Routine post-procedural evaluation (within 30 days)		None					
118.	Evaluation due to a change in clinical status and/or new concerning signs or symptoms		None					
119.	Routine surveillance (3-6 months) in an asymptomatic infant		None					
120.	Routine surveillance (1-2 years) in an asymptomatic child with no or mild sequelae		None					
121.	Routine surveillance (2-3 years) in an asymptomatic adult with no or mild sequelae		None					
122.	Routine surveillance (6-12 months) in an asymptomatic child with ≥ moderate sequelae		None					
123.	Routine surveillance (1-3 years) in an asymptomatic adult with ≥ moderate sequelae		None					
124.	Routine surveillance (3-12 months) in a patient with heart failure symptoms		ACCF/AHA Guideline for the Management of Heart Failure (2013): Section 6.4 -- Yancy, et al. (10)					

Table 9 Additional Resources:

Table 10: Mitral Valve Disease

Unrepaired: Congenital Mitral Stenosis (MS)	Level of Evidence	TTE	TEE	MRI	CT	Stress Imaging

125.	Routine surveillance (1-4 weeks) in an infant with mild MS		None
126.	Routine surveillance (3-6 months) in an infant with mild MS		None
127.	Routine surveillance (1-3 months) in an infant with ≥ moderate MS		None
128.	Routine surveillance (1-2 years) in an asymptomatic child with mild MS		None
129.	Routine surveillance (3-12 months) in an asymptomatic child with ≥moderate MS		None
130.	Evaluation due to change in clinical status and/or new concerning signs or symptoms	B, C	AHA/ACC Guideline for the Management of Patients with Valvular Heart Disease (2014): Section 6 -- Nishimura, et al. (18) ACCF/ACR/AHA/NASCI/SCMR Expert Consensus Document on CMR (2010) -- American College of Cardiology Foundation Task Force on Expert Consensus, et al. (20) ASE/EACVI Clinical Use of Stress Echocardiography in Non-Ischaemic Heart Disease (2017) -- Lancellotti, et al. (21) SCCT CT Imaging in Patients with Congenital Heart Disease Part 1 (2015) – Han, et al. (8) ASE Indications and Guidelines for Performance of TEE in the Patient with Pediatric Acquired or Congenital Heart Disease (2005) -- Ayres, et al. (4) ACC/AHA Guideline for the Management of Heart Failure (2013): Section 6 -- Yancy, et al. (10)
131.	Evaluation prior to planned repair		See above

Unrepaired: Congenital Mitral Regurgitation (MR) including Mitral Valve Prolapse (MVP)	Level of Evidence	TTE	TEE	MRI	CT	Stress Imaging

132.	Routine surveillance (6-12 months) in an asymptomatic infant with mild MR		None
133.	Routine surveillance (1-3 months) in an asymptomatic infant with ≥moderate MR		None
134.	Routine surveillance (2-5 years) in a child with mild MR, normal LV size and systolic function		None
135.	Routine surveillance (6-12 months) in a child with ≥ moderate MR		None
136.	Routine surveillance (annually) in an asymptomatic child with MVP and mild MR		None
137.	Routine surveillance (2-5 years) in an asymptomatic child with MVP and mild MR		None
138.	Evaluation due to change in clinical status and/or new concerning signs or symptoms	B, C	AHA/ACC Guideline for the Management of Patients with Valvular Heart Disease (2014): Section 7 -- Nishimura, et al. (18) ACCF/ACR/AHA/NASCI/SCMR Expert Consensus Document on CMR (2010) -- American College of Cardiology Foundation Task Force on Expert Consensus, et al. (20) ASE/EACVI Clinical Use of Stress Echocardiography in Non-Ischaemic Heart Disease (2017) -- Lancellotti, et al. (21) SCCT CT Imaging in Patients with Congenital Heart Disease Part 1 (2015) – Han, et al. (8) ASE Indications and Guidelines for Performance of TEE in the Patient with Pediatric Acquired or Congenital Heart Disease (2005) -- Ayres, et al. (4) ACCF/AHA Guideline for the Management of Heart Failure (2013): Section 6 -- Yancy, et al. (10)

139.	Evaluation prior to planned repair		See above

Post-procedural: Surgical or Catheter-based		Level of Evidence	TTE	TEE	MRI	CT	Stress Imaging	Fluoro
140.	Routine post-procedural evaluation (within 30 days)		None					
141.	Evaluation in an infant or child due to change in clinical status and/or new concerning signs or symptoms		ASE/SCMR Recommendations for Noninvasive Evaluation of Native Valvular Regurgitation (2017) -- Zoghbi, et al. (15) ACCF/ACR/AHA/NASCI/SCMR Expert Consensus Document on CMR (2010) -- American College of Cardiology Foundation Task Force on Expert Consensus, et al. (20) ASE Indications and Guidelines for Performance of TEE in the Patient with Pediatric Acquired or Congenital Heart Disease (2005) -- Ayres, et al. (4) ASE Recommendations for Evaluation of Prosthetic Valves with Echocardiography and Doppler Ultrasound (2009) -- Zoghbi, et al. (22) SCCT CT Imaging in Patients with Congenital Heart Disease Part 1 (2015) – Han, et al. (8)					
142.	Routine surveillance (3-6 months) in an infant with mild MS or MR and no LV dysfunction		None					
143.	Routine surveillance (1-3 months) in an infant with ≥ moderate MS or MR, dilated LV, and no LV dysfunction		None					
144.	Routine surveillance (1-2 years) in a child with mild MS or MR and no LV dysfunction		None					
145.	Routine surveillance (3-12 months) in a child with ≥ moderate MS or MR, dilated LV, and no LV dysfunction		None					

146.	Routine surveillance (annually) in a child with normal prosthetic mitral valve function and no LV dysfunction		None
147.	Routine surveillance (3-12 months) in a child with prosthetic mitral valve or ventricular dysfunction, and/or arrhythmia		None

Table 10 Additional Resources:

Table 11: Left Ventricular Outflow Tract (LVOT) Lesions

Unrepaired: Subvalvular Aortic Stenosis		Level of Evidence	TTE	TEE	MRI	CT	Stress Imaging
148.	Routine surveillance (1-3 months) in an infant with any degree of subvalvular AS and ≤ mild AR		None				
149.	Routine surveillance (1-2 years) in a child or adult with mild subvalvular AS and no AR		ACC/AHA ACHD Guidelines (2018): Section 4.2.3 -- Stout, et al. (1) CCS Consensus Conference on Management of Adults with CHD: Outflow Tract Obstruction (2009) -- Silversides, et al. (17)				
150.	Routine surveillance (6-12 months) in a child or adult with ≥ moderate subvalvular AS and/or ≤ mild AR		See above				
151.	Routine surveillance (3-5 years) in an asymptomatic adult with ≥ moderate subvalvular AS		None				
152.	Evaluation due to change in clinical status and/or new concerning signs or symptoms		ACC/AHA ACHD Guidelines (2018): Section 4.2.3 -- Stout, et al. (1) AEPC/EACVI Expert Consensus Paper: Indications for CMR in Children with Congenital and Acquired Heart Disease (2015) -- Valsangiacomo Buechel, et al. (2) ESC Recommendations for CMR in Adults with CHD (2010) -- Kilner, et al. (3)				

			ASE Indications and Guidelines for Performance of TEE in the Patient with Pediatric Acquired or CHD (2005) -- Ayres, et al. (4) SCCT CT Imaging in Patients with CHD Part 1 (2015) -- Han, et al. (8) CCS Consensus Conference on Management of Adults with CHD: Outflow Tract Obstruction (2009) -- Silversides, et al. (17)				
153.	Evaluation prior to planned repair		See above				
Post-operative		**Level of Evidence**	**TTE**	**TEE**	**MRI**	**CT**	**Stress Imaging**
154.	Routine post-operative evaluation (within 30 days)		None				
155.	Evaluation due to change in clinical status and/or new concerning signs or symptoms		ACC/AHA ACHD Guidelines (2018): Section 4.2.3 -- Stout, et al. (1) AEPC/EACVI Expert Consensus Paper: Indications for CMR in Children with Congenital and Acquired Heart Disease (2015) -- Valsangiacomo Buechel, et al. (2) ESC Recommendations for CMR in Adults with CHD (2010) -- Kilner, et al. (3) ASE Indications and Guidelines for Performance of TEE in the Patient with Pediatric Acquired or CHD (2005) -- Ayres, et al. (4) SCCT CT Imaging in Patients with CHD Part 1 (2015) -- Han, et al. (8) CCS Consensus Conference on Management of Adults with CHD: Outflow Tract Obstruction (2009) -- Silversides, et al. (17)				
156.	Routine surveillance (3-6 months) in an infant with ≤ mild stenosis and/or AR		None				
157.	Routine surveillance (1-3 months) in an infant with ≥ moderate stenosis and/or AR		None				

158.	Routine surveillance (1-2 years) in a child or adult with ≤ mild stenosis and/or AR		ACC/AHA ACHD Guidelines (2018): Section 4.2.3 -- Stout, et al. (1)
159.	Routine surveillance (6-12 months) in a child or adult with ≥ moderate stenosis and/or AR		See above
160.	Routine surveillance (3-12 months) in an adult with heart failure symptoms or ≥ moderate stenosis and/or AR		See above

***Unrepaired: Aortic Valve Stenosis and/or Regurgitation**		**Level of Evidence**	**TTE**	**TEE**	**MRI**	**CT**	**Stress Imaging**
161.	Routine surveillance (1-4 weeks) in an infant (<3 months old) with any degree of AS and/or AR not requiring neonatal surgery		None				
162.	Routine surveillance (3-6 months) in an infant (3-12 months old) with mild AS and/or mild AR		None				
163.	Routine surveillance (1-3 months) in an infant (3-12 months old) with ≥ moderate AS and/or ≥ moderate AR		None				
164.	Routine surveillance (6 months) in an asymptomatic child with mild AS and/or mild AR		None				
165.	Routine surveillance (1-2 years) in an asymptomatic child with mild AS and/or mild AR		None				
166.	Routine surveillance (6-12 months) in an asymptomatic child with ≥ moderate AS and/or ≥ moderate AR		None				
167.	Routine surveillance (3-5 years) in a child with a bicuspid aortic valve with trivial or mild valvular dysfunction with		None				

	no aortic sinus and/or ascending aortic dilation		
168.	Routine surveillance (2-3 years) in a child with aortic sinus and/or ascending aortic dilation with stable z-scores		None
169.	Routine surveillance (6-12 months) in a child with aortic sinus and/or ascending aortic dilation with increasing z-scores		None
170.	Evaluation due to change in clinical status and/or new concerning signs or symptoms		AHA/ACC Guideline for the Management of Patients With Valvular Heart Disease (2014): Sections 3.2, 4.2 -- Nishimura, et al. (18) AEPC/EACVI Expert Consensus Paper: Indications for CMR in Children with Congenital and Acquired Heart Disease (2015) -- Valsangiacomo Buechel, et al. (2) ESC Recommendations for CMR in Adults with CHD (2010) -- Kilner, et al. (3) ASE Indications and Guidelines for Performance of TEE in the Patient with Pediatric Acquired or CHD (2005) -- Ayres, et al. (4) SCCT CT Imaging in Patients with CHD Part 1 (2015) -- Han, et al. (8)
171.	Evaluation prior to planned repair		See above

*This part of the table does not include indications for adults.

*Post-procedural: Surgical or Catheter-based		Level of Evidence	TTE	TEE	MRI	CT	Stress Imaging	Fluoro
172.	Routine post-procedural evaluation (within 30 days)		None					
173.	Evaluation due to change in clinical status and/or new concerning signs or symptoms		AHA/ACC Guideline for the Management of Patients With Valvular Heart Disease (2014): Sections 3.2, 4.2 -- Nishimura, et al. (18) AEPC/EACVI Expert Consensus Paper: Indications for CMR in Children with Congenital and Acquired Heart Disease (2015) -- Valsangiacomo Buechel, et al. (2) ESC Recommendations for CMR in Adults with CHD (2010) -- Kilner, et al. (3)					

			ASE Indications and Guidelines for Performance of TEE in the Patient with Pediatric Acquired or CHD (2005) -- Ayres, et al. (4) SCCT CT Imaging in Patients with CHD Part 1 (2015): Section 2.11 – Han, et al. (8) ASE Recommendations for Evaluation of Prosthetic Valves With Echocardiography and Doppler Ultrasound (2009) -- Zoghbi, et al. (22) CCS Consensus Conference on Management of Adults with CHD: Outflow Tract Obstruction (2009) -- Silversides, et al. (17)
174.	Routine surveillance (3-6 months) in an infant following neonatal intervention with ≤ mild AS and/or AR and no LV dysfunction		None
175.	Routine surveillance (1-3 months) in an infant following neonatal intervention with ≥ moderate AS and/or regurgitation, and/or LV dysfunction		None
176.	Routine surveillance (1-2 years) in a child with ≤ mild AS and/or AR following repair or normal prosthetic valve function		None
177.	Routine surveillance (6-12 months) in a child with ≥ moderate AS or AR		None
178.	Routine surveillance (3-12 months) in a child with heart failure symptoms and/or ventricular dysfunction		None

*This part of the table does not include indications for adults.

Unrepaired: Supravalvular Aortic Stenosis	Level of Evidence	TTE	TEE	MRI	CT	Stress Imaging

179.	Routine surveillance (3-6 months) in an infant with any degree of supravalvular AS		None
180.	Routine surveillance (1-2 years) in an asymptomatic child or adult with mild supravalvular AS		ACC/AHA ACHD Guidelines (2018): Section 4.2.5 -- Stout, et al. (1)
181.	Routine surveillance (6-12 months) in an asymptomatic child or adult with moderate supravalvular AS		See above
182.	Routine surveillance (2-5 years) in an asymptomatic adult with moderate supravalvular AS		See above
183.	Evaluation due to change in clinical status and/or new concerning signs or symptoms		See above + ASE/EACVI Clinical Use of Stress Echocardiography in Non-Ischaemic Heart Disease (2017) -- Lancellotti, et al. (21) AEPC/EACVI Expert Consensus Paper: Indications for CMR in Children with Congenital and Acquired Heart Disease (2015) -- Valsangiacomo Buechel, et al. (2) ESC Recommendations for CMR in Adults with CHD (2010) -- Kilner, et al. (3) ASE Indications and Guidelines for Performance of TEE in the Patient with Pediatric Acquired or CHD (2005) -- Ayres, et al. (4) SCCT CT Imaging in Patients with CHD Part 1 (2015): Sections 2.2, 2.11 – Han, et al. (8) CCS Consensus Conference on Management of Adults with CHD: Outflow Tract Obstruction (2009) -- Silversides, et al. (17)
184.	Evaluation prior to planned repair		See Above + SCCT Guidelines for the Performance and Acquisition of Coronary CT Angiography (2016) -- Abbara, et al. (23)

Post-operative		Level of Evidence	TTE	TEE	MRI	CT	Stress Imaging
185.	Routine post-operative evaluation (within 30 days)		None				
186.	Evaluation due to change in clinical status and/or new concerning signs or symptoms		ACC/AHA ACHD Guidelines (2018): Section 4.2.5 -- Stout, et al. (1) ASE/EACVI Clinical Use of Stress Echocardiography in Non-Ischaemic Heart Disease (2017) -- Lancellotti, et al. (21) AEPC/EACVI Expert Consensus Paper: Indications for CMR in Children with Congenital and Acquired Heart Disease (2015) -- Valsangiacomo Buechel, et al. (2) ESC Recommendations for CMR in Adults with CHD (2010) -- Kilner, et al. (3) ASE Indications and Guidelines for Performance of TEE in the Patient with Pediatric Acquired or CHD (2005) -- Ayres, et al. (4) SCCT CT Imaging in Patients with CHD Part 1 (2015): Sections 2.2, 2.11 – Han, et al. (8) CCS Consensus Conference on Management of Adults with CHD: Outflow Tract Obstruction (2009) -- Silversides, et al. (17)				
187.	Routine surveillance (2-5 years) in a patient with no or mild supravalvular AS		ACC/AHA ACHD Guidelines (2018): Section 4.2.5 -- Stout, et al. (1)				
188.	Routine surveillance (6-12 months) in a patient with ≥ moderate supravalvular AS		See above				

Table 11 Additional Resources:

Fratz S, Chung T, Greil GF, et al. Guidelines and protocols for cardiovascular magnetic resonance in children and adults with congenital heart disease: SCMR expert consensus group on congenital heart disease. J Cardiovasc Magn Reson. 2013; 15:51.

Kirk R, Dipchand AI, Rosenthal DN, et al. The International Society for Heart and Lung Transplantation Guidelines for the management of pediatric heart failure: Executive summary. [Corrected]. J Heart Lung Transplant. 2014; 33:888-909.

Table 12: Aortic Coarctation/ Interrupted Aortic Arch

Unrepaired		Level of Evidence	TTE	TEE	MRI	CT	Stress Imaging
189.	Routine surveillance (3-6 months) in an infant with mild aortic coarctation in the absence of a PDA		None				
190.	Routine surveillance (1-2 years) in a child or adult with mild aortic coarctation		ACC/AHA ACHD Guidelines (2018): Section 4.2.6, Table 21 -- Stout, et al. (1)				
191.	Routine surveillance (3-5 years) in a child or adult with mild aortic coarctation		See above				
192.	Evaluation due to change in clinical status and/or new concerning signs or symptoms		See above + AEPC/EACVI Expert Consensus Paper: Indications for CMR in Children with Congenital and Acquired Heart Disease (2015) -- Valsangiacomo Buechel, et al. (2) ESC Recommendations for CMR in Adults with CHD (2010) -- Kilner, et al. (3) ASE Indications and Guidelines for Performance of TEE in the Patient with Pediatric Acquired or CHD (2005) -- Ayres, et al. (4) SCCT CT Imaging in Patients with CHD Part 1 (2015) -- Han, et al. (8) ASE/EACVI Clinical Use of Stress Echocardiography in Non-Ischaemic Heart Disease (2017) -- Lancellotti, et al. (21) ASE/EACVI Multimodality Imaging of Diseases of Thoracic Aorta in Adults (2015) -- Goldstein, et al. (24)				

			CCS Consensus Conference on Management of Adults with CHD: Coarctation of the Aorta (2009) -- Silversides, et al. (17)				
193.	Evaluation prior to planned repair	B	See above + ACC/AHA ACHD Guidelines (2018): Section 4.2.6, Table 21 -- Stout, et al. (1) ACCF/SCCT/ACR/AHA/ASE/ASNC/NASCI/SCAI/SCMR AUC for Cardiac CT (2010): Table 7 -- Taylor, et al. (6)				
Post-procedural: Surgical or Catheter-based		**Level of Evidence**	**TTE**	**TEE**	**MRI**	**CT**	**Fluoro**
194.	Routine post-procedural evaluation (within 30 days)		None				
195.	Evaluation due to change in clinical status and/or new concerning signs or symptoms		ACC/AHA ACHD Guidelines (2008): Section 6.14 -- Warnes, et al. (7) AEPC/EACVI Expert Consensus Paper: Indications for CMR in Children with Congenital and Acquired Heart Disease (2015) -- Valsangiacomo Buechel, et al. (2) ESC Recommendations for CMR in Adults with CHD (2010) -- Kilner, et al. (3) ASE Indications and Guidelines for Performance of TEE in the Patient with Pediatric Acquired or CHD (2005) -- Ayres, et al. (4) SCCT CT Imaging in Patients with CHD Part 1 (2015) -- Han, et al. (8) ASE/EACVI Clinical Use of Stress Echocardiography in Non-Ischaemic Heart Disease (2017) -- Lancellotti, et al. (21) ASE/EACVI Multimodality Imaging of Diseases of Thoracic Aorta in Adults (2015) -- Goldstein, et al. (24) CCS Consensus Conference on Management of Adults with CHD: Coarctation of the Aorta (2009) -- Silversides, et al. (17)				

			ACCF/SCCT/ACR/AHA/ASE/ASNC/NASCI/SCAI/SCMR AUC for Cardiac CT (2010): Table 7 -- Taylor, et al. (6)
196.	Routine surveillance (3-6 months) within the first year following surgical or catheter-based intervention in an asymptomatic patient with no or mild sequelae		ACC/AHA ACHD Guidelines (2008): Section 6.14 -- Warnes, et al. (7) CCS Consensus Conference on Management of Adults with CHD: Coarctation of the Aorta (2009) -- Silversides, et al. (17)
197.	Routine surveillance (6 months) after the first year following surgical or catheter-based intervention in an asymptomatic patient with no or mild sequelae		See above
198.	Routine surveillance (1-2 years) after the first year following surgical or catheter-based intervention in an asymptomatic patient with no or mild sequelae		See above
199.	Routine surveillance (3-5 years) in an asymptomatic patient to evaluate for aortic arch aneurysms, in-stent stenosis, stent fracture, or endoleak		See above + ACC/AHA ACHD Guidelines (2018): Section 4.2.6, Table 21 -- Stout, et al. (1)
200.	Routine Surveillance (3-12 months) in a patient with heart failure symptoms	C	ACCF/AHA Guideline for the Management of Heart Failure (2013): Section 6.4 -- Yancy, et al. (10)

Table 12 Additional Resources:

Fratz S, Chung T, Greil GF, et al. Guidelines and protocols for cardiovascular magnetic resonance in children and adults with congenital heart disease: SCMR expert consensus group on congenital heart disease. J Cardiovasc Magn Reson. 2013; 15:51.

Table 13: Coronary Anomalies

Unrepaired	Level of Evidence	TTE	MRI	CT	Stress Imaging

201.	Routine surveillance (annually) in an asymptomatic patient with anomalous right coronary artery from the left aortic sinus	C	AATS Expert Consensus Guidelines: Anomalous Coronary Artery (2017): Tables 3 and 4 -- Brothers, et al. (25)
202.	Routine surveillance (2-5 years) in an asymptomatic patient with anomalous right coronary artery from the left aortic sinus		See above
203.	Routine surveillance (annually) in an asymptomatic patient with small coronary fistula		None
204.	Routine surveillance (2-5 years) in an asymptomatic patient with small coronary fistula	C	ACC/AHA ACHD Guidelines (2008): Section 8.8 -- Warnes, et al. (7)
205.	Routine surveillance (1-2 years) in an asymptomatic patient with moderate or large coronary fistula		See above
206.	Evaluation due to change in clinical status and/or new concerning signs or symptoms	C B	ACC/AHA ACHD Guidelines (2018): Section 4.4.7 -- Stout, et al. (1) AATS Expert Consensus Guidelines: Anomalous Coronary Artery (2017): Section 2 -- Brothers, et al. (25) ACCF/SCCT/ACR/AHA/ASE/ASNC/NASCI/SCAI/SCMR AUC for Cardiac CT (2010): Table 7 -- Taylor, et al. (6)
207.	Evaluation prior to planned repair	 B	See above + ACCF/ACR/AHA/NASCI/SCMR Expert Consensus Document on CMR (2010) -- American College of Cardiology Foundation Task Force on Expert Consensus, et al. (20) Eligibility and Disqualification Recommendations for Competitive Athletes with Cardiovascular Abnormalities: Task Force 4: Congenital Heart Disease (2015) -- Van Hare, et al. (26)

Post-procedural: Surgical and Catheter-based		Level of Evidence	TTE	MRI	CT	Stress Imaging
208.	Routine post-procedural evaluation (within 30 days)	C C	AATS Expert Consensus Guidelines: Anomalous Coronary Artery (2017): Table 2 -- Brothers, et al. (25) Eligibility and Disqualification Recommendations for Competitive Athletes with Cardiovascular Abnormalities: Task Force 4: Congenital Heart Disease (2015) -- Van Hare, et al. (26)			
209.	Evaluation due to change in clinical status and/or new concerning signs or symptoms	C	AATS Expert Consensus Guidelines: Anomalous Coronary Artery (2017): Section 4 -- Brothers, et al. (25) ACCF/ACR/AHA/NASCI/SCMR Expert Consensus Document on CMR (2010) -- American College of Cardiology Foundation Task Force on Expert Consensus, et al. (20) ACCF/SCCT/ACR/AHA/ASE/ASNC/NASCI/SCAI/SCMR AUC for Cardiac CT (2010): Table 7 -- Taylor, et al. (6)			
210.	Evaluation within 1 year after surgery or catheter-based intervention with no or mild sequelae	C	AATS Expert Consensus Guidelines: Anomalous Coronary Artery (2017): Table 2 -- Brothers, et al. (25)			
211.	Routine surveillance (1-3 months) within the first year following repair		See above			
212.	Routine surveillance (3-6 months) in an infant with or without ventricular or valvular dysfunction		See above			
213.	Routine surveillance (3-6 months) in a child or adult with ventricular or valvular dysfunction		See above			
214.	Routine surveillance (annually) with no or mild sequelae		See above			
215.	Routine surveillance (2-5 years) with no or mild sequelae		See above			

Table 13 Additional Resources:

Table 14: Tetralogy of Fallot (TOF)

Unrepaired		Level of Evidence	TTE	TEE	MRI	CT
216.	Routine surveillance (1-3 months) in an infant before complete repair		None			
217.	Routine surveillance (1-3 months) in an infant following valvuloplasty, PDA and/or RVOT stenting, or shunt placement before complete repair		None			
218.	Evaluation due to change in clinical status and/or new concerning signs or symptoms		AEPC/EACVI Expert Consensus Paper: Indications for CMR in Children with Congenital and Acquired Heart Disease (2015) -- Valsangiacomo Buechel, et al. (2) ESC Recommendations for CMR in Adults with CHD (2010) -- Kilner, et al. (3) ASE Indications and Guidelines for Performance of TEE in the Patient with Pediatric Acquired or CHD (2005) -- Ayres, et al. (4) SCCT CT Imaging in Patients with CHD Part 1 (2015): Section 2.6 -- Han, et al. (8)			
219.	Evaluation prior to planned repair		See above			

Post-operative: Initial Repair		Level of Evidence	TTE	TEE	MRI	CT	Stress Imaging	Lung Scan
220.	Routine post-operative evaluation (within 30 days)		None					

221.	Evaluation due to change in clinical status and/or new concerning signs or symptoms		ACC/AHA ACHD Guidelines (2008): Sections 10.4, 10.5 -- Warnes, et al. (7) ASE Multimodality Imaging Guidelines for Patients with Repaired Tetralogy of Fallot (2014) -- Valente, et al. (27) AEPC/EACVI Expert Consensus Paper: Indications for CMR in Children with Congenital and Acquired Heart Disease (2015) -- Valsangiacomo Buechel, et al. (2) ESC Recommendations for CMR in Adults with CHD (2010) -- Kilner, et al. (3) ASE Indications and Guidelines for Performance of TEE in the Patient with Pediatric Acquired or CHD (2005) -- Ayres, et al. (4) SCCT CT Imaging in Patients with CHD Part 1 (2015): Section 2.6 -- Han, et al. (8) CCS Consensus Conference on Management of Adults with CHD: Tetralogy of Fallot (2009) -- Silversides, et al. (17) ACCF/SCCT/ACR/AHA/ASE/ASNC/NASCI/SCAI/SCMR AUC for Cardiac CT (2010): Table 7 -- Taylor, et al. (6)
222.	Routine surveillance (annually) in an asymptomatic patient with no or mild sequelae or pulmonary regurgitation of any severity		ACC/AHA ACHD Guidelines (2018): Section 4.3.5, Table 27, Figure 4 – Stout, et al. (1) CCS Consensus Conference on Management of Adults with CHD: Tetralogy of Fallot (2009) -- Silversides, et al. (17)
223.	Routine surveillance (6-12 months) in a patient with valvular dysfunction other than pulmonary valve, RVOT obstruction, branch pulmonary artery stenosis, arrhythmia or presence of a RV-to-PA conduit		See above
224.	Routine surveillance (2-3 years) in a patient with pulmonary regurgitation and preserved ventricular function		See above

225.	Routine surveillance (3-12 months) in a patient with heart failure symptoms		ACC/AHA ACHD Guidelines (2018): Section 4.3.5, Table 27 -- Stout, et al. (1) ACCF/AHA Guideline for the Management of Heart Failure (2013): Section 6.4 -- Yancy, et al. (10)
226.	Evaluation prior to planned pulmonary valve replacement (percutaneous or surgical) including evaluation of the proximal courses of the coronary arteries	B	See above + ACC/AHA ACHD Guidelines (2018): Section 4.3.5, Table 27, Figure 4 – Stout, et al. (1) SCCT Guidelines for the Performance and Acquisition of Coronary CT Angiography (2016) -- Abbara, et al. (23)

Post-procedural: Surgical or Catheter-based pulmonary valve replacement		**Level of Evidence**	**TTE**	**TEE**	**MRI**	**CT**	**Stress Imaging**	**Fluoro**	**Lung scan**
227.	Routine post-procedural evaluation (within 30 days)		None						
228.	Evaluation due to change in clinical status and/or new concerning signs or symptoms		ACC/AHA ACHD Guidelines (2018): Section 4.3.5, Table 27 -- Stout, et al. (1) ASE Multimodality Imaging Guidelines for Patients with Repaired Tetralogy of Fallot (2014) -- Valente, et al. (27) AEPC/EACVI Expert Consensus Paper: Indications for CMR in Children with Congenital and Acquired Heart Disease (2015) -- Valsangiacomo Buechel, et al. (2) ESC Recommendations for CMR in Adults with CHD (2010) -- Kilner, et al. (3) ASE Indications and Guidelines for Performance of TEE in the Patient with Pediatric Acquired or CHD (2005) -- Ayres, et al. (4) SCCT CT Imaging in Patients with CHD Part 1 (2015): Section 2.6 -- Han, et al. (8) CCS Consensus Conference on Management of Adults with CHD: Tetralogy of Fallot (2009) -- Silversides, et al. (17)						

			ACCF/SCCT/ACR/AHA/ASE/ASNC/NASCI/SCAI/SCMR AUC for Cardiac CT (2010): Table 7 -- Taylor, et al. (6)
229.	Evaluation at 1 year following transcatheter or surgical pulmonary valve replacement	C	ACC/AHA ACHD Guidelines (2008): Sections 10.4, 10.5 -- Warnes, et al. (7) One-Year Follow-Up of the Melody Transcatheter Pulmonary Valve Multicenter Post-Approval Study (2014) -- Armstrong, et al. (28) ASE Multimodality Imaging Guidelines for Patients with Repaired Tetralogy of Fallot (2014): Table 6 -- Valente, et al. (27)
230.	Routine surveillance at 1 and 6 months in an asymptomatic patient following transcatheter pulmonary valve replacement		One-Year Follow-Up of the Melody Transcatheter Pulmonary Valve Multicenter Post-Approval Study (2014) -- Armstrong, et al. (28)
231.	Routine surveillance (annually) in an asymptomatic patient following transcatheter pulmonary valve replacement		See above
232.	Routine surveillance (annually) in an asymptomatic patient with no or mild sequelae		ACC/AHA ACHD Guidelines (2018): Section 4.3.5, Table 27 -- Stout, et al. (1) CCS Consensus Conference on Management of Adults with CHD: Tetralogy of Fallot (2009) -- Silversides, et al. (17)
233.	Routine surveillance (6-12 months) in a patient with RV-PA conduit dysfunction, valvular or ventricular dysfunction, branch pulmonary artery stenosis, or arrhythmia	C	ACC/AHA ACHD Guidelines (2008): Sections 10.4, 10.5 -- Warnes, et al. (7)
234.	Routine surveillance (2-3 years) in an asymptomatic patient with no or mild sequelae	B	ACC/AHA ACHD Guidelines (2018): Section 4.3.5, Table 27 -- Stout, et al. (1) CCS Consensus Conference on Management of Adults with CHD: Tetralogy of Fallot (2009) -- Silversides, et al. (17) ASE Multimodality Imaging Guidelines for Patients with Repaired Tetralogy of Fallot (2014): Table 6 -- Valente, et al. (27)

235.	Routine surveillance (2-3 years) in a patient with valvular or ventricular dysfunction, RVOT obstruction, branch pulmonary artery stenosis, or presence of a RV-to-PA conduit		ASE Multimodality Imaging Guidelines for Patients with Repaired Tetralogy of Fallot (2014): Table 6 -- Valente, et al. (27)
236.	Routine surveillance (3-12 months) in a patient with heart failure symptoms		ACC/AHA ACHD Guidelines (2018): Section 4.3.5, Table 27 -- Stout, et al. (1) ACC/AHA Guideline for the Management of Heart Failure (2013): Section 6.4 -- Yancy, et al. (10)

Table 14 Additional Resources:

Fratz S, Chung T, Greil GF, et al. Guidelines and protocols for cardiovascular magnetic resonance in children and adults with congenital heart disease: SCMR expert consensus group on congenital heart disease. J Cardiovasc Magn Reson. 2013; 15:51.

Table 15: Double Outlet Right Ventricle (DORV)

Unrepaired		Level of Evidence	TTE	TEE	MRI	CT
237.	Routine surveillance (1-3 months) in an infant with balanced systemic and pulmonary circulation		None			
238.	Routine surveillance (3-6 months) in a child with balanced systemic and pulmonary circulation		None			
239.	Evaluation due to change in clinical status and/or new concerning signs or symptoms		AEPC/EACVI Expert Consensus Paper: Indications for CMR in Children with Congenital and Acquired Heart Disease (2015) -- Valsangiacomo Buechel, et al. (2) ESC Recommendations for CMR in Adults with CHD (2010) -- Kilner, et al. (3) ASE Indications and Guidelines for Performance of TEE in the Patient with Pediatric Acquired or CHD (2005) -- Ayres, et al. (4)			

240.	Evaluation prior to planned repair		See above

Post-operative		Level of Evidence	TTE	TEE	MRI	CT	Stress Imaging	Lung Scan
241.	Routine post-procedural evaluation (within 30 days)		None					
242.	Evaluation due to change in clinical status and/or new concerning signs or symptoms	C	ACC/AHA ACHD Guidelines (2018): Section 4.4.5, 4.3.5, 4.3.6 -- Stout, et al. (1) AEPC/EACVI Expert Consensus Paper: Indications for CMR in Children with Congenital and Acquired Heart Disease (2015) -- Valsangiacomo Buechel, et al. (2) ESC Recommendations for CMR in Adults with CHD (2010) -- Kilner, et al. (3) ASE Indications and Guidelines for Performance of TEE in the Patient with Pediatric Acquired or CHD (2005) -- Ayres, et al. (4) SCCT CT Imaging in Patients with CHD Part 1 (2015) -- Han, et al. (8) ASE Multimodality Imaging Guidelines for Patients with Repaired Tetralogy of Fallot (2014) -- Valente, et al. (27) ASE/SCMR/SCCT Multimodality Imaging Guidelines of Patients with TGA (2016) -- Cohen, et al. (29) ACCF/SCCT/ACR/AHA/ASE/ASNC/NASCI/SCAI/SCMR AUC for Cardiac CT (2010): Table 7 -- Taylor, et al. (6)					
243.	Routine surveillance (6 months) within a year following repair in an asymptomatic infant or child with no or mild sequelae		None					
244.	Routine surveillance (1-2 years) in an asymptomatic patient with no or mild sequelae	C	ACC/AHA ACHD Guidelines (2018): Section 4.4.5, 4.3.5, 4.3.6 -- Stout, et al. (1)					

245.	Routine surveillance (6-12 months) in a patient with valvular or ventricular dysfunction, right or left ventricular outflow tract obstruction, branch pulmonary artery stenosis, arrhythmia, or presence of a RV-to-PA conduit		See above
246.	Routine surveillance (2-3 years) in an asymptomatic patient with no or mild sequelae		See above
247.	Routine surveillance (3-12 months) in a patient with heart failure symptoms		ACCF/AHA Guideline for the Management of Heart Failure (2013) – Yancy, et al. (10)

Table 15 Additional Resources:

Fratz S, Chung T, Greil GF, et al. Guidelines and protocols for cardiovascular magnetic resonance in children and adults with congenital heart disease: SCMR expert consensus group on congenital heart disease. J Cardiovasc Magn Reson. 2013; 15:51.

Kirk R, Dipchand AI, Rosenthal DN, et al. The International Society for Heart and Lung Transplantation Guidelines for the management of pediatric heart failure: Executive summary. [Corrected]. J Heart Lung Transplant. 2014; 33:888-909.

Table 16: D-Loop Transposition of the Great Arteries (TGA)

Unrepaired		Level of Evidence	TTE	MRI	CT
248.	Evaluation due to change in clinical status and/or new concerning signs or symptoms		ASE/SCMR/SCCT Multimodality Imaging Guidelines of Patients with TGA (2016) -- Cohen, et al. (29) AEPC/EACVI Expert Consensus Paper: Indications for CMR in Children with Congenital and Acquired Heart Disease (2015) -- Valsangiacomo Buechel, et al. (2) ESC Recommendations for CMR in Adults with CHD (2010) -- Kilner, et al. (3)		

			ASE Indications and Guidelines for Performance of TEE in the Patient with Pediatric Acquired or CHD (2005) -- Ayres, et al. (4) SCCT CT Imaging in Patients with CHD Part 1 (2015) -- Han, et al. (8)
249.	Evaluation prior to planned repair		See above

Post-operative: Arterial Switch Operation		Level of Evidence	TTE	TEE	MRI	CT	Stress Imaging	Lung Scan
250.	Routine post-operative evaluation (within 30 days)		None					
251.	Evaluation due to change in clinical status and/or new concerning signs or symptoms	B, C	ACC/AHA ACHD Guidelines (2018): Section 4.4.1.2 -- Stout, et al. (1) ASE/SCMR/SCCT Multimodality Imaging Guidelines of Patients with TGA (2016) -- Cohen, et al. (29) AEPC/EACVI Expert Consensus Paper: Indications for CMR in Children with Congenital and Acquired Heart Disease (2015) -- Valsangiacomo Buechel, et al. (2) ESC Recommendations for CMR in Adults with CHD (2010) -- Kilner, et al. (3) SCCT CT Imaging in Patients with CHD Part 1 (2015): Section 2.7 -- Han, et al. (8) CCS Consensus Conference on Management of Adults with CHD: Complex CHD (2009) -- Silversides, et al. (14) ACCF/SCCT/ACR/AHA/ASE/ASNC/NASCI/SCAI/SCMR AUC for Cardiac CT (2010): Table 7 -- Taylor, et al. (6) ASE Indications and Guidelines for Performance of TEE in the Patient with Pediatric Acquired or CHD (2005) -- Ayres, et al. (4)					
252.	Evaluation for coronary imaging in an asymptomatic patient		See above					

253.	Routine surveillance (1-3 months) in an asymptomatic infant with moderate sequelae		None					
254.	Routine surveillance (3-6 months) in an asymptomatic infant with no or mild sequelae		None					
255.	Routine surveillance (6-12 months) in an asymptomatic child or adult with moderate sequelae	C	ACC/AHA ACHD Guidelines (2018): Section 4.4.1.2 -- Stout, et al. (1) CCS Consensus Conference on Management of Adults with CHD: Complex CHD (2009) -- Silversides, et al. (14)					
256.	Routine surveillance (1-2 years) in an asymptomatic child or adult with no or mild sequelae		See above					
257.	Routine surveillance (3-5 years) in an asymptomatic patient		See above					
258.	Routine surveillance (1-2 years) in a patient with dilated neo-aortic root with increasing Z scores, or neo-aortic regurgitation		See above					
259.	Routine surveillance (3-12 months) in a patient with heart failure symptoms		See above					
Post-operative: Rastelli		**Level of Evidence**	**TTE**	**TEE**	**MRI**	**CT**	**Stress Imaging**	**Lung Scan**
260.	Routine post-operative evaluation (within 30 days)		None					
261.	Evaluation due to change in clinical status and/or new concerning signs or symptoms	B, C	ACC/AHA ACHD Guidelines (2018): Section 4.3.6, 4.4.1.3 -- Stout, et al. (1) ASE/SCMR/SCCT Multimodality Imaging Guidelines of Patients with TGA (2016) -- Cohen, et al. (29) AEPC/EACVI Expert Consensus Paper: Indications for CMR in Children with Congenital and Acquired Heart Disease (2015) -- Valsangiacomo Buechel, et al. (2) ESC Recommendations for CMR in Adults with CHD (2010) -- Kilner, et al. (3)					

			ASE Indications and Guidelines for Performance of TEE in the Patient with Pediatric Acquired or CHD (2005) -- Ayres, et al. (4) SCCT CT Imaging in Patients with CHD Part 1 (2015): Section 2.7 -- Han, et al. (8) CCS Consensus Conference on Management of Adults with CHD: Complex CHD (2009) -- Silversides, et al. (14) ACCF/SCCT/ACR/AHA/ASE/ASNC/NASCI/SCAI/SCMR AUC for Cardiac CT (2010): Table 7 -- Taylor, et al. (6)					
262.	Routine surveillance (3-6 months) within the first year following repair		None					
263.	Routine surveillance (6 months) after the first year following repair in an asymptomatic patient with no or mild sequelae		None					
264.	Routine surveillance (1-2 years) in an asymptomatic patient with no or mild sequelae	B, C	ACC/AHA ACHD Guidelines (2018): 4.3.6, 4.4.1.3 -- Stout, et al. (1) CCS Consensus Conference on Management of Adults with CHD: Complex CHD (2009) -- Silversides, et al. (14)					
265.	Routine surveillance (3-5 years) in an asymptomatic patient		See above					
266.	Routine surveillance (3-12 months) in a patient with valvular dysfunction, LVOT obstruction, presence of a RV to PA conduit, branch pulmonary artery stenosis, or arrhythmia		See above					
267.	Routine surveillance (3-12 months) in a patient with heart failure symptoms		See above					
Post-operative: Atrial Switch Operation		**Level of Evidence**	**TTE**	**TTE + saline**	**TEE**	**MRI**	**CT**	**Stress Imaging**

268.	Evaluation due to concerning signs or symptoms and/or change in clinical status	B, C	ACC/AHA ACHD Guidelines (2018): Section 4.4.1.1 -- Stout, et al. (1) ASE/SCMR/SCCT Multimodality Imaging Guidelines of Patients with TGA (2016) -- Cohen, et al. (29) AEPC/EACVI Expert Consensus Paper: Indications for CMR in Children with Congenital and Acquired Heart Disease (2015) -- Valsangiacomo Buechel, et al. (2) ESC Recommendations for CMR in Adults with CHD (2010) -- Kilner, et al. (3) ASE Indications and Guidelines for Performance of TEE in the Patient with Pediatric Acquired or CHD (2005) -- Ayres, et al. (4) SCCT CT Imaging in Patients with CHD Part 1 (2015): Section 2.7 -- Han, et al. (8) CCS Consensus Conference on Management of Adults with CHD: Complex CHD (2009) -- Silversides, et al. (14) ACCF/SCCT/ACR/AHA/ASE/ASNC/NASCI/SCAI/SCMR AUC for Cardiac CT (2010): Table 7 -- Taylor, et al. (6)
269.	Routine surveillance (6 months) in an asymptomatic patient with no or mild sequelae	C	ACC/AHA ACHD Guidelines (2018): Section 4.4.1.1 -- Stout, et al. (1)
270.	Routine surveillance (1-2 years) in an asymptomatic patient with no or mild sequelae		See above
271.	Routine surveillance (6-12 months) in an asymptomatic patient with ≥moderate sequelae		See above
272.	Routine surveillance (3-5 years) in an asymptomatic patient		See above
273.	Routine surveillance (3-12 months) in a patient with ≥moderate systemic AV valve regurgitation, systemic RV		See above

	dysfunction, LVOT obstruction, or arrhythmia		
274.	Routine surveillance (3-12 months) in a patient with heart failure symptoms		See above

Table 16 Additional Resources:

Fratz S, Chung T, Greil GF, et al. Guidelines and protocols for cardiovascular magnetic resonance in children and adults with congenital heart disease: SCMR expert consensus group on congenital heart disease. J Cardiovasc Magn Reson. 2013; 15:51.

Table 17: Congenitally Corrected Transposition of the Great Arteries (ccTGA)

Unrepaired		Level of Evidence	TTE	TEE	MRI	CT	Stress Imaging
275.	Evaluation due to change in clinical status and/or new concerning signs or symptoms	C	ACC/AHA ACHD Guidelines (2018): Section 4.4.1.4 -- Stout, et al. (1) AEPC/EACVI Expert Consensus Paper: Indications for CMR in Children with Congenital and Acquired Heart Disease (2015) -- Valsangiacomo Buechel, et al. (2) ESC Recommendations for CMR in Adults with CHD (2010) -- Kilner, et al. (3) ASE Indications and Guidelines for Performance of TEE in the Patient with Pediatric Acquired or CHD (2005) -- Ayres, et al. (4) SCCT CT Imaging in Patients with CHD Part 1 (2015): Section 2.7 -- Han, et al. (8) CCS Consensus Conference on Management of Adults with CHD: Complex CHD (2009) -- Silversides, et al. (14) ACCF/SCCT/ACR/AHA/ASE/ASNC/NASCI/SCAI/SCMR AUC for Cardiac CT (2010): Table 7 -- Taylor, et al. (6)				
276.	Routine surveillance (3-6 months) in an asymptomatic infant		None				

277.	Routine surveillance (1-2 years) in a patient with <moderate systemic AV valve regurgitation	C	ACC/AHA ACHD Guidelines (2018): Section 4.4.1.4 -- Stout, et al. (1)
278.	Routine surveillance (6-12 months) in a patient with ≥moderate systemic AV valve regurgitation		See above
279.	Routine surveillance (3-5 years) in an asymptomatic patient		See above
280.	Routine surveillance (3-12 months) in a patient with heart failure symptoms		See above
281.	Evaluation prior to planned repair	C	ACC/AHA ACHD Guidelines (2018): Section 4.4.1.4 -- Stout, et al. (1) AEPC/EACVI Expert Consensus Paper: Indications for CMR in Children with Congenital and Acquired Heart Disease (2015) -- Valsangiacomo Buechel, et al. (2) ESC Recommendations for CMR in Adults with CHD (2010) -- Kilner, et al. (3) ASE Indications and Guidelines for Performance of TEE in the Patient with Pediatric Acquired or CHD (2005) -- Ayres, et al. (4) SCCT CT Imaging in Patients with CHD Part 1 (2015): Section 2.7 -- Han, et al. (8) CCS Consensus Conference on Management of Adults with CHD: Complex CHD (2009) -- Silversides, et al. (14) ACCF/SCCT/ACR/AHA/ASE/ASNC/NASCI/SCAI/SCMR AUC for Cardiac CT (2010): Table 7 -- Taylor, et al. (6)

Post-operative: Anatomic Repair		**Level of Evidence**	**TTE**	**TTE + Saline**	**TEE**	**MRI**	**CT**	**Stress Imaging**
282.	Routine post-operative evaluation (within 30 days)		None					

283.	Evaluation due to change in clinical status and/or new concerning signs or symptoms	B, C	ACC/AHA ACHD Guidelines (2018): Section 4.4.1.4, 4.4.1.2, 4.3.6 -- Stout, et al. (1) ASE/SCMR/SCCT Multimodality Imaging Guidelines of Patients with TGA (2016) -- Cohen, et al. (29) AEPC/EACVI Expert Consensus Paper: Indications for CMR in Children with Congenital and Acquired Heart Disease (2015) -- Valsangiacomo Buechel, et al. (2) ESC Recommendations for CMR in Adults with CHD (2010) -- Kilner, et al. (3) ASE Indications and Guidelines for Performance of TEE in the Patient with Pediatric Acquired or CHD (2005) -- Ayres, et al. (4) SCCT CT Imaging in Patients with CHD Part 1 (2015): Section 2.7 -- Han, et al. (8) CCS Consensus Conference on Management of Adults with CHD: Complex CHD (2009) -- Silversides, et al. (14) ACCF/SCCT/ACR/AHA/ASE/ASNC/NASCI/SCAI/SCMR AUC for Cardiac CT (2010): Table 7 -- Taylor, et al. (6)
284.	Routine surveillance (3-6 months) within a year following repair in an asymptomatic patient with no or mild sequelae	B, C	ACC/AHA ACHD Guidelines (2018): Section 4.4.1.4, 4.4.1.2, 4.3.6 -- Stout, et al. (1)
285.	Routine surveillance (1-2 years) after the first year following repair in an asymptomatic patient with no or mild sequelae		See above
286.	Routine surveillance (6-12 months) in a patient with valvular or ventricular dysfunction, right or left ventricular outflow tract obstruction, or presence of a RV-to-PA conduit		See above

287.	Routine surveillance (2-3 years) in a patient with valvular or ventricular dysfunction, right or left ventricular outflow tract obstruction, or presence of a RV-to-PA conduit		See above
288.	Routine surveillance (3-12 months) in a patient with heart failure symptoms		See above

Post-operative: Physiologic Repair with VSD closure and/or LV to PA conduit		**Level of Evidence**	**TTE**	**TEE**	**MRI**	**CT**	**Stress Imaging**
289.	Routine post-operative evaluation (within 30 days)		None				
290.	Evaluation due to change in clinical status and/or new concerning signs or symptoms	C	ACC/AHA ACHD Guidelines (2018): Section 4.4.1.4 -- Stout, et al. (1) AEPC/EACVI Expert Consensus Paper: Indications for CMR in Children with Congenital and Acquired Heart Disease (2015) -- Valsangiacomo Buechel, et al. (2) ESC Recommendations for CMR in Adults with CHD (2010) -- Kilner, et al. (3) ASE Indications and Guidelines for Performance of TEE in the Patient with Pediatric Acquired or CHD (2005) -- Ayres, et al. (4) SCCT CT Imaging in Patients with CHD Part 1 (2015): Section 2.7 -- Han, et al. (8) CCS Consensus Conference on Management of Adults with CHD: Complex CHD (2009) -- Silversides, et al. (14) ACCF/SCCT/ACR/AHA/ASE/ASNC/NASCI/SCAI/SCMR AUC for Cardiac CT (2010): Table 7 -- Taylor, et al. (6)				
291.	Routine surveillance (3-6 months) within a year following repair in an asymptomatic patient with no or mild sequelae	C	ACC/AHA ACHD Guidelines (2018): Section 4.4.1.4 -- Stout, et al. (1) CCS Consensus Conference on Management of Adults with CHD: Complex CHD (2009) -- Silversides, et al. (14)				

292.	Routine surveillance (1-2 years) in an asymptomatic patient with no or mild sequelae		See above
293.	Routine surveillance (3-5 years) in an asymptomatic patient with no or mild sequelae		See above
294.	Routine surveillance (3-12 months) in a patient with ≥ moderate systemic AV valve regurgitation, systemic RV dysfunction, and/or LV-to-PA conduit dysfunction		See above
295.	Routine surveillance (3-12 months) in a patient with heart failure symptoms		ACCF/AHA Guideline for the Management of Heart Failure (2013) – Yancy, et al. (10)

Table 17 Additional Resources:

Fratz S, Chung T, Greil GF, et al. Guidelines and protocols for cardiovascular magnetic resonance in children and adults with congenital heart disease: SCMR expert consensus group on congenital heart disease. J Cardiovasc Magn Reson. 2013; 15:51.

Kirk R, Dipchand AI, Rosenthal DN, et al. The International Society for Heart and Lung Transplantation Guidelines for the management of pediatric heart failure: Executive summary. [Corrected]. J Heart Lung Transplant. 2014; 33:888-909.

Table 18: Truncus Arteriosus (TA)

Unrepaired		Level of Evidence	TTE	MRI	CT
296.	Evaluation due to change in clinical status and/or new concerning signs or symptoms		AEPC/EACVI Expert Consensus Paper: Indications for CMR in Children with Congenital and Acquired Heart Disease (2015) -- Valsangiacomo Buechel, et al. (2) ESC Recommendations for CMR in Adults with CHD (2010) -- Kilner, et al. (3) SCCT CT Imaging in Patients with CHD Part 1 (2015) -- Han, et al. (8)		

297.	Evaluation prior to planned repair		None

Post-procedural: Surgery or Catheter-based		Level of Evidence	TTE	TEE	MRI	CT	Stress Imaging	Lung Scan
298.	Routine post-procedural evaluation (within 30 days)		None					
299.	Evaluation due to change in clinical status and/or new concerning signs or symptoms	B	ASE Indications and Guidelines for Performance of TEE in the Patient with Pediatric Acquired or Congenital Heart Disease (2005) -- Ayres, et al. (4) SCCT CT Imaging in Patients with Congenital Heart Disease Part 1 (2015) – Han, et al. (8) ASE/EACVI Clinical Use of Stress Echocardiography in Non-Ischaemic Heart Disease (2017) -- Lancellotti, et al. (21) ASE/EACVI Recommendations on the Echocardiographic Assessment of Aortic Valve Stenosis (2017) -- Baumgartner, et al. (30) AHA/ACC Guideline for the Management of Patients with Valvular Heart Disease (2014): Sections 3, 4 -- Nishimura, et al. (18) AEPC/EACVI Expert Consensus Paper: Indications for CMR in Children with Congenital and Acquired Heart Disease (2015) -- Valsangiacomo Buechel, et al. (2) ESC Recommendations for CMR in Adults with CHD (2010) -- Kilner, et al. (3) ACCF/SCT/ACR/ASE/ASNC/SCAI/SCMR AUC for Cardiac CT (2010): Table 7 -- Taylor, et al. (6)					
300.	Routine surveillance (1-3 months) within the first year following repair in an asymptomatic patient		None					
301.	Routine surveillance (6-12 months) after the first year following repair in		None					

	an asymptomatic child or adult with no or mild sequelae		
302.	Routine surveillance (2-3 year(s)) in an asymptomatic child or adult with no or mild sequelae		None
303.	Routine surveillance (3-6 months) in an asymptomatic child or adult with ≥ moderate truncal stenosis and/or regurgitation		None
304.	Routine surveillance (1-2 years) in an asymptomatic child or adult with ≥ moderate truncal stenosis and/or regurgitation		None
305.	Routine surveillance (3-12 months) in a patient with known residual VSD, presence of a RV-to-PA conduit, or branch PA obstruction		ASE Indications and Guidelines for Performance of TEE in the Patient with Pediatric Acquired or Congenital Heart Disease (2005) -- Ayres, et al. (4) SCCT CT Imaging in Patients with Congenital Heart Disease Part 1 (2015) – Han, et al. (8) ASE/EACVI Clinical Use of Stress Echocardiography in Non-Ischaemic Heart Disease (2017) -- Lancellotti, et al. (21) ASE/EACVI Recommendations on the Echocardiographic Assessment of Aortic Valve Stenosis (2017) -- Baumgartner, et al. (30) AHA/ACC Guideline for the Management of Patients with Valvular Heart Disease (2014): Sections 3, 4 -- Nishimura, et al. (18) AEPC/EACVI Expert Consensus Paper: Indications for CMR in Children with Congenital and Acquired Heart Disease (2015) -- Valsangiacomo Buechel, et al. (2) ESC Recommendations for CMR in Adults with CHD (2010) -- Kilner, et al. (3) ACCF/SCT/ACR/ASE/ASNC/SCAI/SCMR AUC for Cardiac CT (2010): Table 7 -- Taylor, et al. (6)

306.	Routine surveillance (3-12 months) in a patient with heart failure symptoms		ACCF/AHA Guideline for the Management of Heart Failure (2013): Section 5 – Yancy, et al. (10)

Table 18 Additional Resources:

Fratz S, Chung T, Greil GF, et al. Guidelines and protocols for cardiovascular magnetic resonance in children and adults with congenital heart disease: SCMR expert consensus group on congenital heart disease. J Cardiovasc Magn Reson. 2013; 15:51.

Nguyen T, John JB, Nardell K, et al. Echocardiography of common arterial trunk. Cardiol Young. 2012; 22:655-63.

Table 19: Single Ventricle Heart Disease

Unrepaired		Level of Evidence	TTE	TEE	MRI	CT	Lung Scan
307.	Routine surveillance (1-4 week(s)) in a patient with balanced systemic and pulmonary circulation not requiring neonatal surgery		None				
308.	Evaluation due to change in clinical status and/or new concerning signs or symptoms		AEPC/EACVI Expert Consensus Paper: Indications for CMR in Children with Congenital and Acquired Heart Disease (2015) -- Valsangiacomo Buechel, et al. (2) ESC Recommendations for CMR in Adults with CHD (2010) -- Kilner, et al. (3) ASE Indications and Guidelines for Performance of TEE in the Patient with Pediatric Acquired or CHD (2005) -- Ayres, et al. (4) SCCT CT Imaging in Patients with CHD Part 1 (2015): Section 2.8 – Han, et al. (8)				
309.	Evaluation prior to planned surgical palliation		See above				
Post-procedural: Surgery and/or Catheter-based (Stage 1 Palliation)		**Level of Evidence**	**TTE**	**TEE**	**MRI**	**CT**	**Lung Scan**
310.	Routine post-procedural evaluation (within 30 days)		None				

311.	Evaluation due to change in clinical status and/or new concerning signs or symptoms		ACC/AHA ACHD Guidelines (2018): Section 14.3 -- Stout, et al. (1) AEPC/EACVI Expert Consensus Paper: Indications for CMR in Children with Congenital and Acquired Heart Disease (2015) -- Valsangiacomo Buechel, et al. (2) ESC Recommendations for CMR in Adults with CHD (2010) -- Kilner, et al. (3) ASE Indications and Guidelines for Performance of TEE in the Patient with Pediatric Acquired or CHD (2005) -- Ayres, et al. (4) SCCT CT Imaging in Patients with CHD Part 1 (2015): Section 2.8 – Han, et al. (8)
312.	Routine surveillance (1-4 weeks) in an asymptomatic infant		None
313.	Evaluation prior to planned stage 2 palliation		AEPC/EACVI Expert Consensus Paper: Indications for CMR in Children with Congenital and Acquired Heart Disease (2015) -- Valsangiacomo Buechel, et al. (2) ESC Recommendations for CMR in Adults with CHD (2010) -- Kilner, et al. (3) ASE Indications and Guidelines for Performance of TEE in the Patient with Pediatric Acquired or CHD (2005) -- Ayres, et al. (4) SCCT CT Imaging in Patients with CHD Part 1 (2015): Section 2.8 – Han, et al. (8)

Post-operative: Stage 2 Palliation		**Level of Evidence**	**TTE**	**TTE + Saline**	**TEE**	**MRI**	**CT**	**Lung Scan**
314.	Routine post-operative evaluation (within 30 days)		None					
315.	Evaluation due to change in clinical status and/or new concerning signs or symptoms		ACC/AHA ACHD Guidelines (2018): Section 14.3 -- Stout, et al. (1) AEPC/EACVI Expert Consensus Paper: Indications for CMR in Children with Congenital and Acquired Heart Disease (2015) -- Valsangiacomo Buechel, et al. (2) ESC Recommendations for CMR in Adults with CHD (2010) -- Kilner, et al. (3)					

			ASE Indications and Guidelines for Performance of TEE in the Patient with Pediatric Acquired or CHD (2005) -- Ayres, et al. (4) SCCT CT Imaging in Patients with CHD Part 1 (2015): Section 2.8 -- Han, et al. (8) ACCF/SCCT/ACR/AHA/ASE/ASNC/NASCI/SCAI/SCMR AUC for Cardiac CT (2010): Table 7 -- Taylor, et al. (6) CCS Consensus Conference on Management of Adults with CHD: Complex CHD (2010) -- Silversides, et al. (14)
316.	Routine surveillance (1-6 months) in an asymptomatic infant or child		None
317.	Routine surveillance (1-2 years) in an asymptomatic child or adult		ACC/AHA ACHD Guidelines (2018): Section 14.3 -- Stout, et al. (1)
318.	Evaluation prior to planned stage 3 palliation		See above + AEPC/EACVI Expert Consensus Paper: Indications for CMR in Children with Congenital and Acquired Heart Disease (2015) -- Valsangiacomo Buechel, et al. (2) ESC Recommendations for CMR in Adults with CHD (2010) -- Kilner, et al. (3) ASE Indications and Guidelines for Performance of TEE in the Patient with Pediatric Acquired or CHD (2005) -- Ayres, et al. (4) SCCT CT Imaging in Patients with CHD Part 1 (2015): Section 2.8 -- Han, et al. (8) ACCF/SCCT/ACR/AHA/ASE/ASNC/NASCI/SCAI/SCMR AUC for Cardiac CT (2010): Table 7 -- Taylor, et al. (6) CCS Consensus Conference on Management of Adults with CHD: Complex CHD (2010) -- Silversides, et al. (14)

Post-operative: Stage 3 Palliation	**Level of Evidence**	**TTE**	**TTE + Saline**	**TEE**	**MRI**	**CT**	**Stress Imaging**

319.	Routine post-operative evaluation (within 30 days)		None
320.	Evaluation due to change in clinical status and/or new concerning signs or symptoms		ACC/AHA ACHD Guidelines (2018): Section 4.4.2 -- Stout, et al. (1) AEPC/EACVI Expert Consensus Paper: Indications for CMR in Children with Congenital and Acquired Heart Disease (2015) -- Valsangiacomo Buechel, et al. (2) ESC Recommendations for CMR in Adults with CHD (2010) -- Kilner, et al. (3) ASE Indications and Guidelines for Performance of TEE in the Patient with Pediatric Acquired or CHD (2005) -- Ayres, et al. (4) SCCT CT Imaging in Patients with CHD Part 1 (2015): Section 2.7 -- Han, et al. (8) ACCF/SCCT/ACR/AHA/ASE/ASNC/NASCI/SCAI/SCMR AUC for Cardiac CT (2010): Table 7 -- Taylor, et al. (6) CCS Consensus Conference on Management of Adults with CHD: Complex CHD (2010) -- Silversides, et al. (14)
321.	Routine surveillance (3-6 months) within a year following stage 3 palliation in an asymptomatic patient		None
322.	Routine surveillance (6-12 months) after the first year following stage 3 palliation in an asymptomatic patient		ACC/AHA ACHD Guidelines (2018): Section 4.4.2 -- Stout, et al. (1)
323.	Routine surveillance (3-5 years) in an asymptomatic patient		See above
324.	Routine surveillance (3-12 months) in a patient with valvular or ventricular dysfunction, arrhythmias, or other cardiac complications		See above
325.	Routine surveillance (3-12 months) in a patient with heart failure symptoms		ACCF/AHA Guideline for the Management of Heart Failure (2013) – Yancy, et al. (10)

Table 19 Additional Resources:

Brown DW, Gauvreau K, Powell AJ, et al. Cardiac magnetic resonance versus routine cardiac catheterization before bidirectional Glenn anastomosis in infants with functional single ventricle: a prospective randomized trial. Circulation. 2007; 116:2718-25.

Brown DW, Gauvreau K, Powell AJ, et al. Cardiac magnetic resonance versus routine cardiac catheterization before bidirectional Glenn anastomosis: long-term follow-up of a prospective randomized trial. J Thorac Cardiovasc Surg. 2013; 146:1172-8.

Fratz S, Chung T, Greil GF, et al. Guidelines and protocols for cardiovascular magnetic resonance in children and adults with congenital heart disease: SCMR expert consensus group on congenital heart disease. J Cardiovasc Magn Reson. 2013; 15:51.

Han BK, Huntley M, Overman D, et al. Cardiovascular CT for evaluation of single-ventricle heart disease: risks and accuracy compared with interventional findings. Cardiol Young. 2018; 28:9-20.

Han BK, Vezmar M, Lesser JR, et al. Selective use of cardiac computed tomography angiography: an alternative diagnostic modality before second-stage single ventricle palliation. J Thorac Cardiovasc Surg. 2014; 148:1548-54.

Margossian R, Schwartz ML, Prakash A, et al. Comparison of echocardiographic and cardiac magnetic resonance imaging measurements of functional single ventricular volumes, mass, and ejection fraction (from the Pediatric Heart Network Fontan Cross-Sectional Study). Am J Cardiol. 2009; 104:419-28.

Stern KW, McElhinney DB, Gauvreau K, et al. Echocardiographic evaluation before bidirectional Glenn operation in functional single-ventricle heart disease: comparison to catheter angiography. Circ Cardiovasc Imaging. 2011; 4:498-505.

Full titles of references within tables:

1. Stout KK, Daniels CJ, Aboulhosn JA, et al. 2018 AHA/ACC Guideline for the Management of Adults With Congenital Heart Disease: A Report of the American College of Cardiology/American Heart Association Task Force on Clinical Practice Guidelines. J Am Coll Cardiol. 2018.

2. Valsangiacomo Buechel ER, Grosse-Wortmann L, Fratz S, et al. Indications for cardiovascular magnetic resonance in children with congenital and acquired heart disease: an expert consensus paper of the Imaging Working Group of the AEPC and the Cardiovascular Magnetic Resonance Section of the EACVI. Eur Heart J Cardiovasc Imaging. 2015;16:281-97.
3. Kilner PJ, Geva T, Kaemmerer H, et al. Recommendations for cardiovascular magnetic resonance in adults with congenital heart disease from the respective working groups of the European Society of Cardiology. Eur Heart J. 2010;31:794-805.
4. Ayres NA, Miller-Hance W, Fyfe DA, et al. Indications and guidelines for performance of transesophageal echocardiography in the patient with pediatric acquired or congenital heart disease: report from the task force of the Pediatric Council of the American Society of Echocardiography. J Am Soc Echocardiogr. 2005;18:91-8.
5. Silversides CK, Dore A, Poirier N, et al. Canadian Cardiovascular Society 2009 Consensus Conference on the management of adults with congenital heart disease: shunt lesions. Can J Cardiol. 2010;26:e70-9.
6. Taylor AJ, Cerqueira M, Hodgson JM, et al. ACCF/SCCT/ACR/AHA/ASE/ASNC/NASCI/SCAI/SCMR 2010 appropriate use criteria for cardiac computed tomography. A report of the American College of Cardiology Foundation Appropriate Use Criteria Task Force, the Society of Cardiovascular Computed Tomography, the American College of Radiology, the American Heart Association, the American Society of Echocardiography, the American Society of Nuclear Cardiology, the North American Society for Cardiovascular Imaging, the Society for Cardiovascular Angiography and Interventions, and the Society for Cardiovascular Magnetic Resonance. J Am Coll Cardiol. 2010;56:1864-94.
7. Warnes CA, Williams RG, Bashore TM, et al. ACC/AHA 2008 guidelines for the management of adults with congenital heart disease: a report of the American College of Cardiology/American Heart Association Task Force on Practice Guidelines (Writing Committee to Develop Guidelines on the Management of Adults With Congenital Heart Disease). Developed in Collaboration With the American Society of Echocardiography, Heart Rhythm Society, International Society for Adult Congenital Heart Disease, Society for Cardiovascular Angiography and Interventions, and Society of Thoracic Surgeons. J Am Coll Cardiol. 2008;52:e143-263.
8. Han BK, Rigsby CK, Hlavacek A, et al. Computed Tomography Imaging in Patients with Congenital Heart Disease Part I: Rationale and Utility. An Expert Consensus Document of the Society of Cardiovascular Computed Tomography (SCCT): Endorsed by the Society of Pediatric Radiology (SPR) and the North American Society of Cardiac Imaging (NASCI). J Cardiovasc Comput Tomogr. 2015;9:475-92.
9. Khairy P, Van Hare GF, Balaji S, et al. PACES/HRS Expert Consensus Statement on the Recognition and Management of Arrhythmias in Adult Congenital Heart Disease: developed in partnership between the Pediatric and Congenital Electrophysiology Society (PACES) and the Heart Rhythm Society (HRS). Endorsed by the governing bodies of PACES, HRS, the American College of Cardiology (ACC), the American Heart Association (AHA), the European Heart Rhythm Association (EHRA), the Canadian Heart Rhythm Society (CHRS), and the International Society for Adult Congenital Heart Disease (ISACHD). Heart Rhythm. 2014;11:e102-65.
10. Yancy CW, Jessup M, Bozkurt B, et al. 2013 ACCF/AHA guideline for the management of heart failure: a report of the American College of Cardiology Foundation/American Heart Association Task Force on Practice Guidelines. J Am Coll Cardiol. 2013;62:e147-239.
11. Abman SH, Hansmann G, Archer SL, et al. Pediatric Pulmonary Hypertension: Guidelines From the American Heart Association and American Thoracic Society. Circulation. 2015;132:2037-99.

12. McLaughlin VV, Archer SL, Badesch DB, et al. ACCF/AHA 2009 expert consensus document on pulmonary hypertension a report of the American College of Cardiology Foundation Task Force on Expert Consensus Documents and the American Heart Association developed in collaboration with the American College of Chest Physicians; American Thoracic Society, Inc.; and the Pulmonary Hypertension Association. J Am Coll Cardiol. 2009;53:1573-619.
13. Galie N, Humbert M, Vachiery JL, et al. 2015 ESC/ERS Guidelines for the diagnosis and treatment of pulmonary hypertension: The Joint Task Force for the Diagnosis and Treatment of Pulmonary Hypertension of the European Society of Cardiology (ESC) and the European Respiratory Society (ERS): Endorsed by: Association for European Paediatric and Congenital Cardiology (AEPC), International Society for Heart and Lung Transplantation (ISHLT). Eur Heart J. 2016;37:67-119.
14. Silversides CK, Salehian O, Oechslin E, et al. Canadian Cardiovascular Society 2009 Consensus Conference on the management of adults with congenital heart disease: complex congenital cardiac lesions. Can J Cardiol. 2010;26:e98-117.
15. Zoghbi WA, Adams D, Bonow RO, et al. Recommendations for Noninvasive Evaluation of Native Valvular Regurgitation: A Report from the American Society of Echocardiography Developed in Collaboration with the Society for Cardiovascular Magnetic Resonance. J Am Soc Echocardiogr. 2017;30:303-71.
16. Baumgartner H, Hung J, Bermejo J, et al. Echocardiographic assessment of valve stenosis: EAE/ASE recommendations for clinical practice. J Am Soc Echocardiogr. 2009;22:1-23; quiz 101-2.
17. Silversides CK, Kiess M, Beauchesne L, et al. Canadian Cardiovascular Society 2009 Consensus Conference on the management of adults with congenital heart disease: outflow tract obstruction, coarctation of the aorta, tetralogy of Fallot, Ebstein anomaly and Marfan's syndrome. Can J Cardiol. 2010;26:e80-97.
18. Nishimura RA, Otto CM, Bonow RO, et al. 2014 AHA/ACC guideline for the management of patients with valvular heart disease: a report of the American College of Cardiology/American Heart Association Task Force on Practice Guidelines. J Am Coll Cardiol. 2014;63:e57-185.
19. Kirk R, Dipchand AI, Rosenthal DN, et al. The International Society for Heart and Lung Transplantation Guidelines for the management of pediatric heart failure: Executive summary. [Corrected]. J Heart Lung Transplant. 2014;33:888-909.
20. American College of Cardiology Foundation Task Force on Expert Consensus D, Hundley WG, Bluemke DA, et al. ACCF/ACR/AHA/NASCI/SCMR 2010 expert consensus document on cardiovascular magnetic resonance: a report of the American College of Cardiology Foundation Task Force on Expert Consensus Documents. J Am Coll Cardiol. 2010;55:2614-62.
21. Lancellotti P, Pellikka PA, Budts W, et al. The Clinical Use of Stress Echocardiography in Non-Ischaemic Heart Disease: Recommendations from the European Association of Cardiovascular Imaging and the American Society of Echocardiography. J Am Soc Echocardiogr. 2017;30:101-38.
22. Zoghbi WA, Chambers JB, Dumesnil JG, et al. Recommendations for evaluation of prosthetic valves with echocardiography and doppler ultrasound: a report From the American Society of Echocardiography's Guidelines and Standards Committee and the Task Force on Prosthetic Valves, developed in conjunction with the American College of Cardiology Cardiovascular Imaging Committee, Cardiac Imaging Committee of the American Heart Association, the European Association of Echocardiography, a registered branch of the European Society of Cardiology, the Japanese Society of Echocardiography and the Canadian Society of Echocardiography, endorsed by the American College of Cardiology Foundation, American Heart Association, European Association of Echocardiography, a registered branch of the European Society of Cardiology, the Japanese Society of Echocardiography, and Canadian Society of Echocardiography. J Am Soc Echocardiogr. 2009;22:975-1014; quiz 82-4.

23. Abbara S, Blanke P, Maroules CD, et al. SCCT guidelines for the performance and acquisition of coronary computed tomographic angiography: A report of the society of Cardiovascular Computed Tomography Guidelines Committee: Endorsed by the North American Society for Cardiovascular Imaging (NASCI). J Cardiovasc Comput Tomogr. 2016;10:435-49.
24. Goldstein SA, Evangelista A, Abbara S, et al. Multimodality imaging of diseases of the thoracic aorta in adults: from the American Society of Echocardiography and the European Association of Cardiovascular Imaging: endorsed by the Society of Cardiovascular Computed Tomography and Society for Cardiovascular Magnetic Resonance. J Am Soc Echocardiogr. 2015;28:119-82.
25. Brothers JA, Frommelt MA, Jaquiss RDB, et al. Expert consensus guidelines: Anomalous aortic origin of a coronary artery. J Thorac Cardiovasc Surg. 2017;153:1440-57.
26. Van Hare GF, Ackerman MJ, Evangelista JK, et al. Eligibility and Disqualification Recommendations for Competitive Athletes With Cardiovascular Abnormalities: Task Force 4: Congenital Heart Disease: A Scientific Statement From the American Heart Association and American College of Cardiology. J Am Coll Cardiol. 2015;66:2372-84.
27. Valente AM, Cook S, Festa P, et al. Multimodality imaging guidelines for patients with repaired tetralogy of fallot: a report from the AmericanSsociety of Echocardiography: developed in collaboration with the Society for Cardiovascular Magnetic Resonance and the Society for Pediatric Radiology. J Am Soc Echocardiogr. 2014;27:111-41.
28. Armstrong AK, Balzer DT, Cabalka AK, et al. One-year follow-up of the Melody transcatheter pulmonary valve multicenter post-approval study. JACC Cardiovasc Interv. 2014;7:1254-62.
29. Cohen MS, Eidem BW, Cetta F, et al. Multimodality Imaging Guidelines of Patients with Transposition of the Great Arteries: A Report from the American Society of Echocardiography Developed in Collaboration with the Society for Cardiovascular Magnetic Resonance and the Society of Cardiovascular Computed Tomography. J Am Soc Echocardiogr. 2016;29:571-621.
30. Baumgartner H, Hung J, Bermejo J, et al. Recommendations on the Echocardiographic Assessment of Aortic Valve Stenosis: A Focused Update from the European Association of Cardiovascular Imaging and the American Society of Echocardiography. J Am Soc Echocardiogr. 2017;30:372-92.