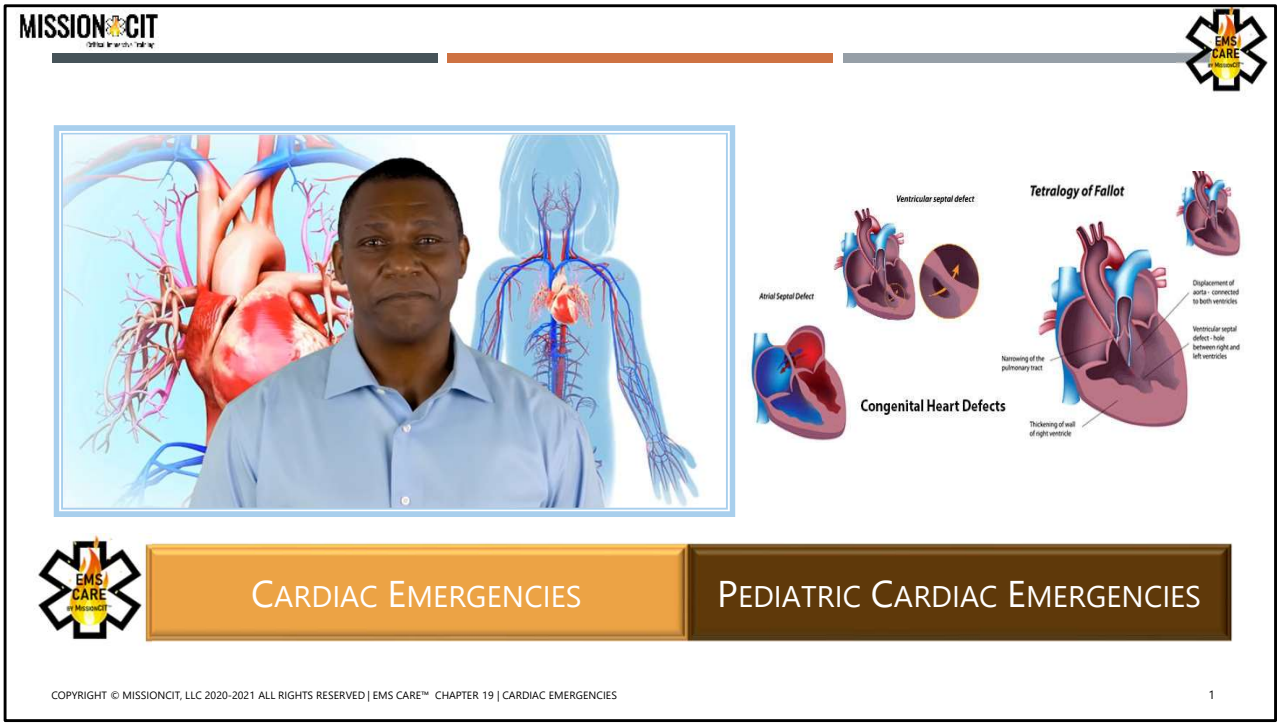
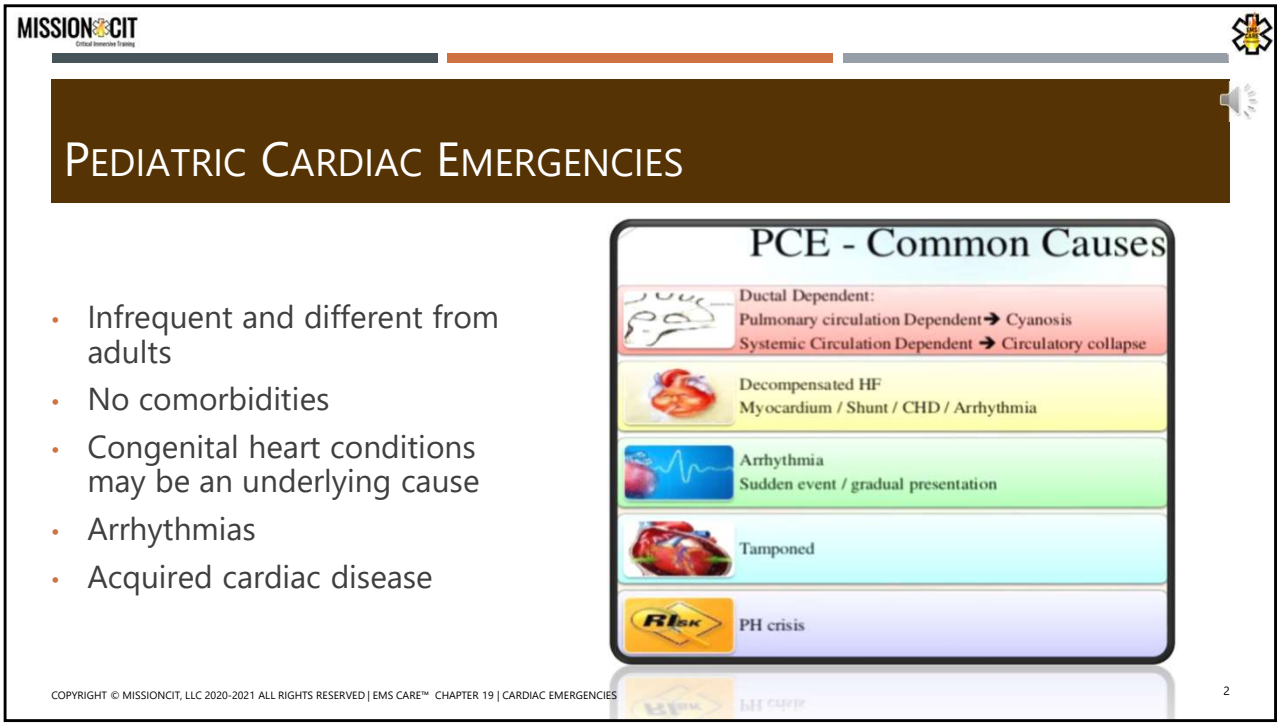


Thank you Missah!

Next, we look at pediatric cardiac emergencies. We discuss congenital heart disease, Arrhythmias and Kawasaki Disease, and Pediatric CPR.

Good studying!



Pediatric cardiac emergencies, are relatively infrequent, and are very different from adults.

The key difference is, that there are no comorbidities or lifestyle-related conditions, that increase the chances of a cardiac emergency.

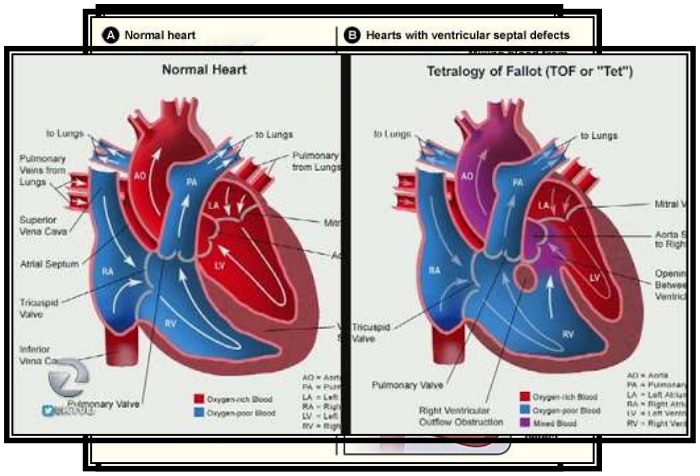
Rather, most emergencies are due to congenital conditions, that may or may not have presented themselves earlier.

Sometimes, it can be due to arrhythmias related to underlying cardiac pathology in teenagers.

In rare cases, the cause can be an acquired cardiac disease.

Congenital Heart Disease

- Rare, but high mortality
- Occurs due to underlying heart defect
- Can be asymptomatic and become critically ill suddenly
- Other reasons include
  - ✓ Non-closure of the ductus
  - ✓ Reduced pulmonary cardiovascular resistance
  - ✓ Inflammatory diseases of the myocardium
  - ✓ Systolic dysfunction



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Congenital heart diseases are rare, and at the same time, mortality is the highest among infants and children who have it. In the majority of the cases, the mortality can be attributed to the underlying heart defect.

Children can be asymptomatic at the beginning and can abruptly become critically ill.

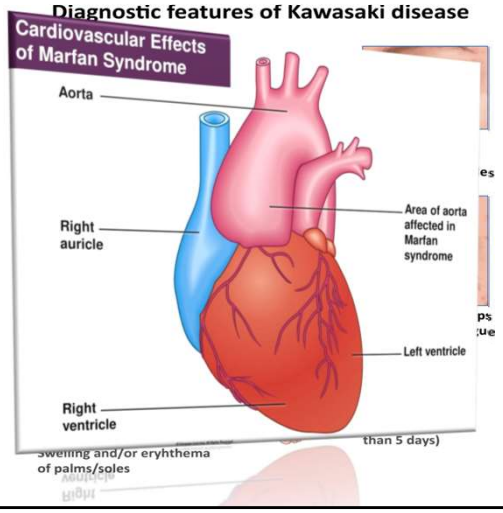
These congenital diseases can be due to the non-closure of the ductus in conjunction with a right or left-sided obstructive cardiac lesion, reduced pulmonary vascular resistance, inflammatory diseases of the myocardium, and dilation of the left ventricle and the resultant

systolic dysfunction.

The most common cause of sudden cardiac arrest is hypertrophic cardiomyopathy that can cause sudden death. This happens mostly due to ventricular fibrillation or hypotension in children.

Arrhythmias and Kawasaki Disease

- Arrhythmias occurs due to a congenital disease
- Conduction disorder in the heart
- Kawasaki disease requires timely recognition and treatment to reduce mortality
- Marfan disease and aortic disease are other cardiac conditions



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Arrhythmias in children, occur due to congenitall or acquired heart disease.

Most times, the problem is a conduction disorder, in an otherwise normal heart, and it tends to be common after cardiac surgery, catheterization procedures, and pre, and post-transplantation.

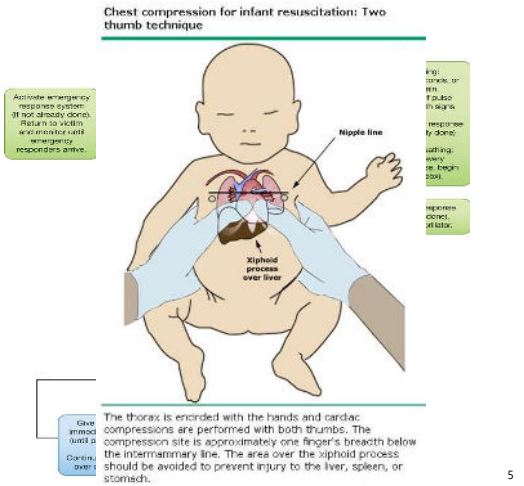
Kawasaki disease is not an emergency; however, timely recognition, and treatment can reduce fatality in the future.

This disease affects children below five years of age.

There are other acquired diseases, such as Marfan syndrome and aortic disease.

PEDIATRIC CPR

- Start CPR
- 100-120 compressions, two breaths after every 30 compressions, and compress 1/3 of the anterior-posterior chest diameter
- For infants (<1 year), use two thumb technique which the 2020 recommendation from AHA
- For children, use one or two hands on the lower sternum
- If there are 2-rescuer, allow 2 breaths for every 15 compressions



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Start CPR, as soon as you detect a cardiac emergency.

Do compressions at the rate of 100 to 120 per minute, for both infants and children.

Ideally, compress one-third of the anterior-posterior diameter of the chest.

Also, allow complete recoil of the chest between compressions.

The key difference is that in infants, use the two thumb technique, while in children older than a year, use one or two hands on the lower half of the sternum. Please note

that the two thumb technique is the 2020 recommendation by the American Heart Association.

As with adults, allow two breaths after every 30 compressions and ventilate with enough volume, to observe chest rise.

If there is more than one person on the team who is trained in CPR, rotate for optimal results.

In the case of 2-rescuer CPR, allow two breaths after every 15 compressions.

With this, we come to the end of this lesson and Missah will recap the lessons for you.