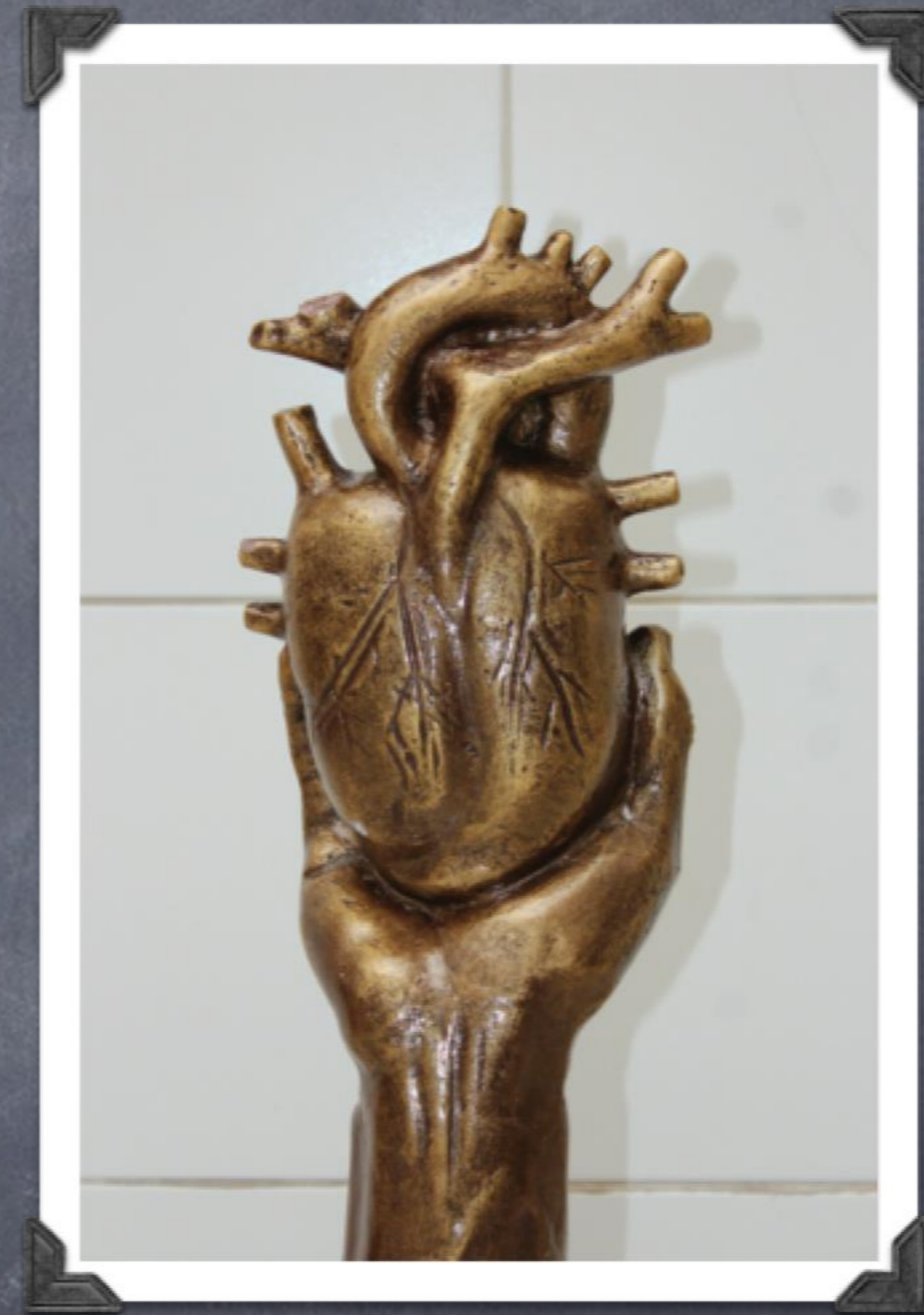


Collaborative programme in paediatric cardiac surgery in Ethiopia: Nursing role



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Inside Ethiopia



- Population: 93 millions people (estimated).
- GDP per capita: 934 \$
- Total health expenditure: 4.3% of GDP (Spain 8.4%).
- Life expectancy at birth: 59.3 years old (in Spain 82)
- Population living in extreme poverty: 72.3% (21.7% in Spain)
- Infant Mortality: 75,29 deaths per 1000 live births (3.37 in Spain).
- Maternal mortality: 350 deaths per 100.000 live births (6 in Spain).

Congenital Heart Disease

- In 2012 it was estimated that 101 out of 1000 children die before the age of 5. (4.2 in Spain)
- 8 out of every 1000 live births suffer congenital heart disease which involve 60.000 children with congenital heart disease each year.
- There is no national program of cardiac surgery throughout the country. Only foreign missions will periodically operate.



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World



50,000 Ethiopian Children Born Annually With Heart Disease

At least 50,000 Ethiopian children are born with congenital heart disease annually, local media reported Monday in Addis Ababa.

Ato Nega Kidan, executive member of the Children Heart Fund of Ethiopia (CHFE), said that medical service delivery at present in Ethiopia "is not in a position to provide proper medical treatment to children with heart disease," noting that the best alternative is to send these children to countries where such services are available.

The cost for heart operation per person is around 20,000 U.S. dollars, an expense neither the victims of families nor the government are able to afford, according to the reports.

Although the CHFE has established a fund to enable 100 children to get medical treatment in and outside Ethiopia, Kidan stressed efforts aimed at alleviating the high-rate of heart disease among children depend more on other organizations and individual donors.

With a birth rate of 2.98 percent, an estimated 6.8 per 1,000 live births are reported to be affected by congenital heart disease in Ethiopia.

Acquired Heart Disease

- 600,000 children between the ages of 5 and 15 are at risk of developing streptococcal infections twice a year.
- An estimated 120,000 children each year develop rheumatic fever. Among them, the youngest are at risk of developing rheumatic heart disease.
- These patients die early as a result of congestive heart failure, arrhythmia, etc. without being able to be operated from their valvular disease.



Cardiac Centre Ethiopia.

- It opened in 2009 and it is a heart center, built by “Children's Heart Fund of Ethiopia”.
- The hospital treats congenital heart disease and rheumatic valve disease in children and young adults. It is only opened when they have surgery missions.
- The work is carried out by voluntary professionals: 5 to 15 days missions performed by international teams: **Spain** 7 missions (2010-2014); Chain of Hope, Arizona, Montana, Sweden, Canada, India.
- Infrastructure: 16 bedded ward; 8 bedded PICU; 2 OR; 2 cath lab; ECO: TT y TE., basic Lab, portable X-ray.





Our Team

- 2 Cardiologists (Ecography and Catheterization)
- 2 Pediatric intensivists
- 2 Surgeons
- 3 Anesthetists
- 1 Perfusionist
- 2 PICU nurses
- 1 Scrub nurse
- 1 Cath lab nurse



Missions Performed

- January 2010 – November 2014: 7 surgical missions carried out.
- Staying between 7 and 10 days each mission.
- Goals: Clinical and Teaching.
- Consumables, and medication needed were donated by the pharmaceutical industry.



Outcomes

- 120 interventions in 118 children suffering from congenital heart disease.
- 80% Pulmonary Hypertension
- 92% extubation in the first 3 horas.
- Average PICU staying: 1,8 days.
- Basic Aristotle score 5,01
- Mortality 3,3% (n=4): 2 from neurological causes and 2 from low cardiac output.



7 Cardiac Missions:
120 surgeries in 118
children.

80 on CPB

43 females and 77 males

Average age:
6,03 yrs (7m -14,08 yrs)

Average weight: 17,18 kg (4,10
to 45 kg)

Pathologies	
ASD and variants	30
VSD and variants	26
Simple and complex PDA	24
Subaortic Stenosis	14
Aortic Coartations	7
Pulmonary Stenosis	1
Re-operation due bleeding	2
Pacemaker for AB block	2
Tetralogy of Fallot	1

5 Surgery + Cath Lab Missions: 146 procedures

Procedures	146
Diagnostic	25
PDA Closure	71
Pulmonary Valvuloplasty	32
ASD Closure	10
Aortic Coarc. Stent	2
LPA Stent	2
Coronary Fistula	1
Rashkind	1
Cardiac Biopsy	1
TOE intracath	1



Nursing training Program in Theatre

- Focus training in 2-3 nurses .
- Anesthesiology Training Assistance: they don't have it integrated as part of their responsibility. There must always be a nurse available for anesthesia, with knowledge of procedures, complications, etc.
- Pre-surgery: OR must always be ready (specify how) in case of an emergency, which involves having it ready by the end of surgery, ventilator included.
 - Intraoperative: Specify how they will distribute the tasks of the Scrub Nurse and Circulating Nurse. Identify instrumentation protocols, skin preparation, assistance anesthesiologist and perfusionist protocols...
 - Postoperative: Specify how to transfer according to the PICU. Improve the cleanliness of cables and devices.



Nursing training program in PICU

- Handling and stabilization of the patient fresh from surgery and catheterization. The crash trolley must be always ready (specify how) in case of emergency , which means that review protocols need to be established, so everything is ready to go, including ventilator.
- Prioritization in drugs administration: it is not the same a patient needing inotropes than a patient needing analgesia or sedation when waking up.
- Respiratory care: watching ETT.
- Drains care: Pleurevac aspiration, water seal, etc.)
- Artery catheters and Central Venous Catheters Care Protocols.



Complications-Solutions



Conclusions

- The development of pediatric cardiac surgery program in developing countries is POSSIBLE.
- It is essential to take into account the lack of resources, and take border problems such as malnutrition, recurrent infections, the lack of devices and some treatments used in the developed countries.



Conclusions

- The surgery planning must be cautious and always depending on the material and human resources of the region.
- For the program's sustainability it is necessary to implement a support system. The local involvement contributes to the progressive **TRAINING** and **FUNDING** towards independence in the medium/long term.





Thanks a lot!.

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