

We transport hope

Mission ERITREA

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Beteiligte Organisationen

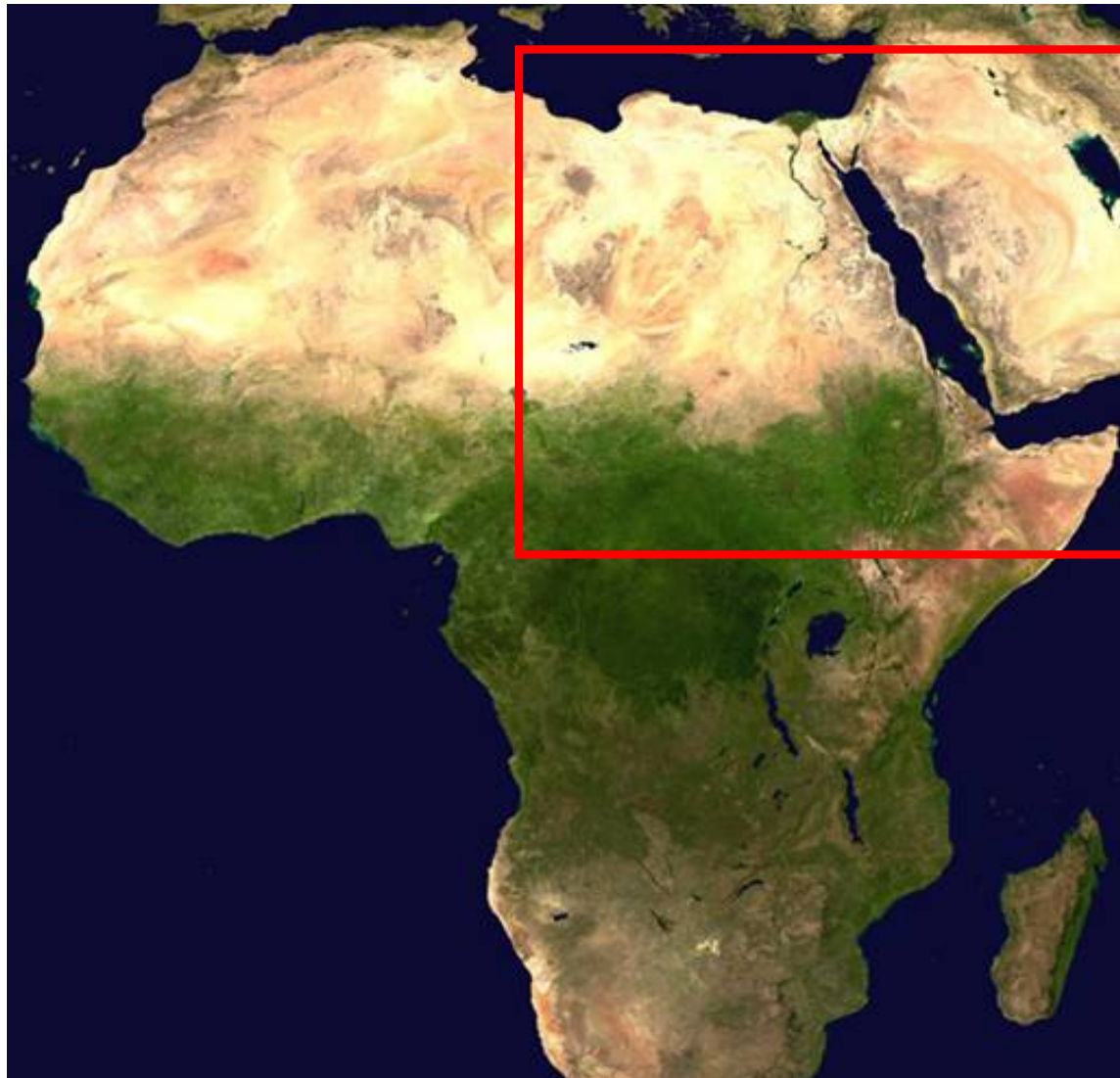
- Hammerforum Deutschland
- EurAsiaHeart Foundation Schweiz
- SUKE
- International College of Surgeons
-

Beteiligte Teams

- Andreas Urban
- Pascal Berdat
- Mi-Young Cho
- Tsegereda Gebrehiwot
- Joseph Tewolde-Ghidei
- Johannes Kroll
- Ornella Milanesi
- Giovanni Stellan
- Sankt Augustin (Germany)
- Bern (Switzerland)
- Padua (Italy)
- Duisburg (Germany)
- Asmara (Eritrea)
- For all members of their teams

ERITREA

Hauptstadt: Asmara







Facts and Figures

	Er	USA	Ger	Pol
GDP / capita in US \$ $\times 10^3$	0.27	45.8	34.2	16.2
Pop. % \downarrow poverty line	53	--	--	23.8
Children underweight	40	2	--	--
HDI rank country	157	12	22	37
Freshwater withdrawal ¹	68	1600	460	304



Demographics 1

	Er	USA	Ger	Pol
Population (in million)	5.03	304	82.4	38.5
Total fertility rate	4.84	2.1	1.31	1.27
Birth rate (per 1000 pop.)	33.6	14.18	8.18	10.0
Age of population ¹	18.1	36.7	43.4	37.6



Demographics 2

	Er	USA	Ger	Pol
Infant < 1y mortality ¹	44.2	6.3	4.0	6.9
Children < 5y mortality ¹	78	7	5	7
Maternal mortality ²	450	11	4	8
Life expectancy at birth	59.9	78.1	79.1	75.4

¹ per 1000 live births

Health Resources

	Er	USA	Ger	Pol
Doctors per 100.000 pop.	1	256	337	247
Nurses per 100.000 pop.	12	937	972	490
Midwives per 100.000 pop.	3	NA	10	57
Births (%) attended by skilled personnel	28.3	99	99.8	99.8

Hammerforum

Hammer Forum was founded in 1991 and is a non-governmental charity organization.

Hammer Forum consist of a body of German physicians who provide medical treatment for children in war- and precarious regions of Europe, Africa and Asia.

In Eritrea the Hammer Forum initiated an humanitarian project in 1995.



Why Eritrea?

- Past 30 years war region (1962-1993)
- No medical school until 2006
- Three pediatricians for 2,5 Mio. children < 18 y
- No pediatric surgery
- One of the poorest countries of the world



The Goal of the Eritrean Mission

- To create a pediatric-medical infrastructure
- To build, equip and run the International Operation Centre for Children in Asmara (IOCCA)
- To initiate and maintain medical and surgical treatment for Eritrean children on a multidisciplinary base including open heart surgery
- To support the Medical School at the University of Asmara
- To organize and run a Teaching hospital for postgraduate medical education in Eritrea

Orotta Hospital Area



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IOCCA

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**IOCCA
Maternity**

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**IOCCA
Maternity
Premature Ward**

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**IOCCA
Maternity
Premature Ward
Outpatient Clinic**



IOCCA
Maternity
Premature Ward
Outpatient Clinic
Cath. Lab.



IOCCA
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Premature Ward
Outpatient Clinic
Cath. Lab.
Children's Hospital



IOCCA
Maternity
Premature Ward
Outpatient Clinic
Cath. Lab.
Children's Hospital
Blood Bank

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What's Different ?

- Umbrella of Hammer Forum
 - Central logistics and quality-control
 - More than one team ¹, individual funding
 - Functioning infrastructure around IOCCA
 - Supranational and multi-institutional team cooperation
- ¹ 5 teams in 2008

The Team

Pediatric cardiologist	1
Anesthesiologist	1
Pediatric cardiac surgeons	2
OR and anesthetic nurses	3
Cardiotechnician	1
Intensivists	2
ICU nurses	8
	18

Funding

Karl Bröcker Stiftung

Un Cuore un Mondo ¹

Stiftung DKHZ St.A.

Geseke / Germany

Padova / Italy

Bonn / Germany

Donations Italy / Germany

Industry

Italy / Germany

¹ Progetto Elias

Funding...

Donations!

Cost - Effectiveness

For the expense of **one** ASO in Germany

ca. € 40 000,-

a team of 18 doctors and nurses can travel to, diagnose, operate and treat **15 children** with CHD in Eritrea.



Results

April 2002 - June 2008

Number of patients operated

279

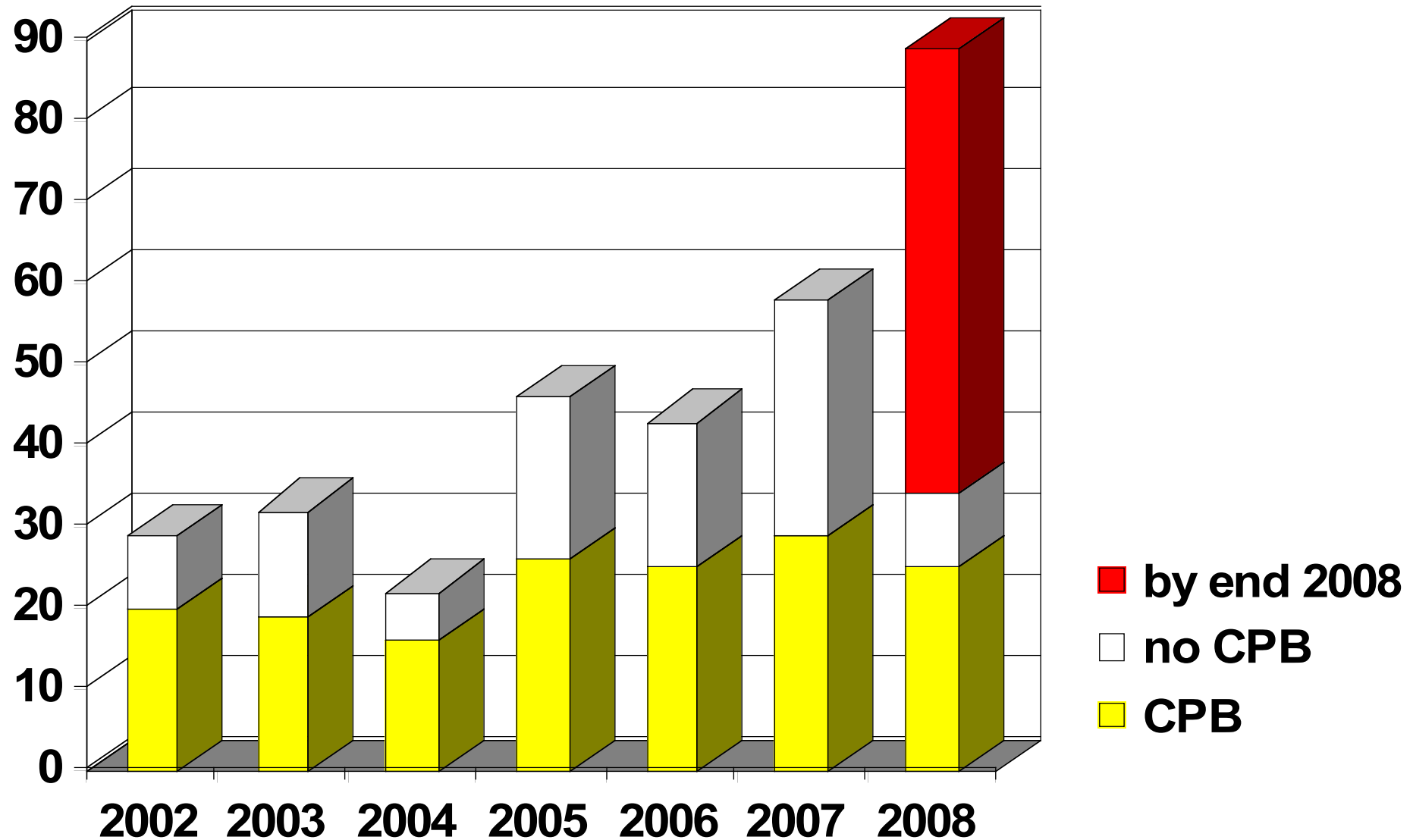
Mean age at surgery

6.5 years (1 month - 18 years)



Surgical Activity 2002-2008

pts



Surgical Procedures

Open heart surgery	172 pts (62%)
Closed heart surgery	107 pts (38%)
Reoperation	5 pts



Open Heart Procedures

172 pts

n

ASD closure

52

VSD closure

57

TOF / DORV repair

18

RVOT reconstruction

12

Mitral valve plasty (12) / MVR (2)

14

Subaortic stenosis resection

9

Atrioseptectomy

3

CAVC repair

4

Cavo-pulmonary anastomosis

2

TAPVC repair

1



Closed Heart Procedures

107 pts

	n
PDA division	89
Coarctation repair	9
Blalock-Taussig shunt	4
Pulmonary artery banding	4
Pacemaker replacement	1



Postoperative Variables

Mean ICU stay	1.6 days range 1-5 days
Complications	9 pts (3.2%)
bleeding	4
pneumothorax	3
reintubation	2
Hospital mortality	4 pts (1.5%)

Follow-Up

mean follow-up time 3.6 years (3 months - 6.4 years)

Late death

1 patient

Reoperation

5 patients

All patients have been followed by
Dr. Tsegereda
(local pediatric cardiologist)



Conclusion

The goal of establishing a Pediatric Cardiac Surgical program in Eritrea has been achieved by a multi-institutional European cooperation of individual surgical teams under the umbrella of the Hammer Forum.

Early and long term results are comparable to those of the best Cardiac Surgical Units in Europe and USA.

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