

# DO INTERNATIONAL CARDIAC SURGICAL PROGRAMMES HAVE A FUTURE?



# DO INTERNATIONAL CARDIAC SURGICAL PROGRAMMES HAVE A FUTURE?





NO  
Better housing/sanitation would save MORE  
lives



NO

MALARIA KILLS NEARLY 3000  
CHILDREN A DAY IN AFRICA

EFFECTIVE DRAINAGE AND  
MOSQUITO NETS WOULD SAVE  
MANY LIVES



YES

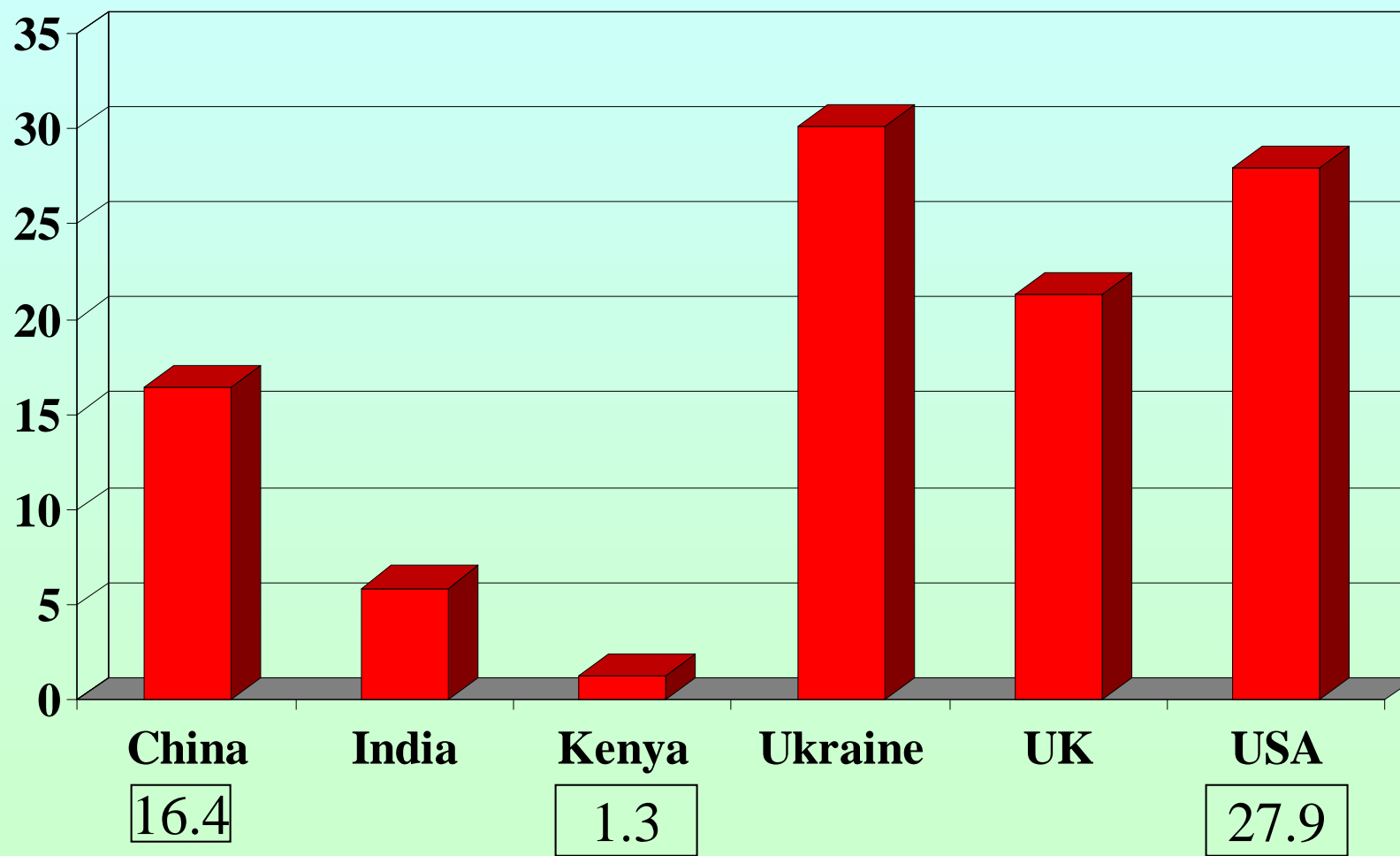
# BARRIERS TO PROVISION OF BETTER HEALTH CARE

- EXPENSE
- POOR ACCESS TO HEALTH CARE FACILITY
- UNDERDEVELOPED STATE OF HEALTH CARE SYSTEM
- LACK OF RESOURCES
- LACK OF HEALTH CARE PERSONNEL
- POOR GOVERNANCE
- CORRUPTION
- WAR



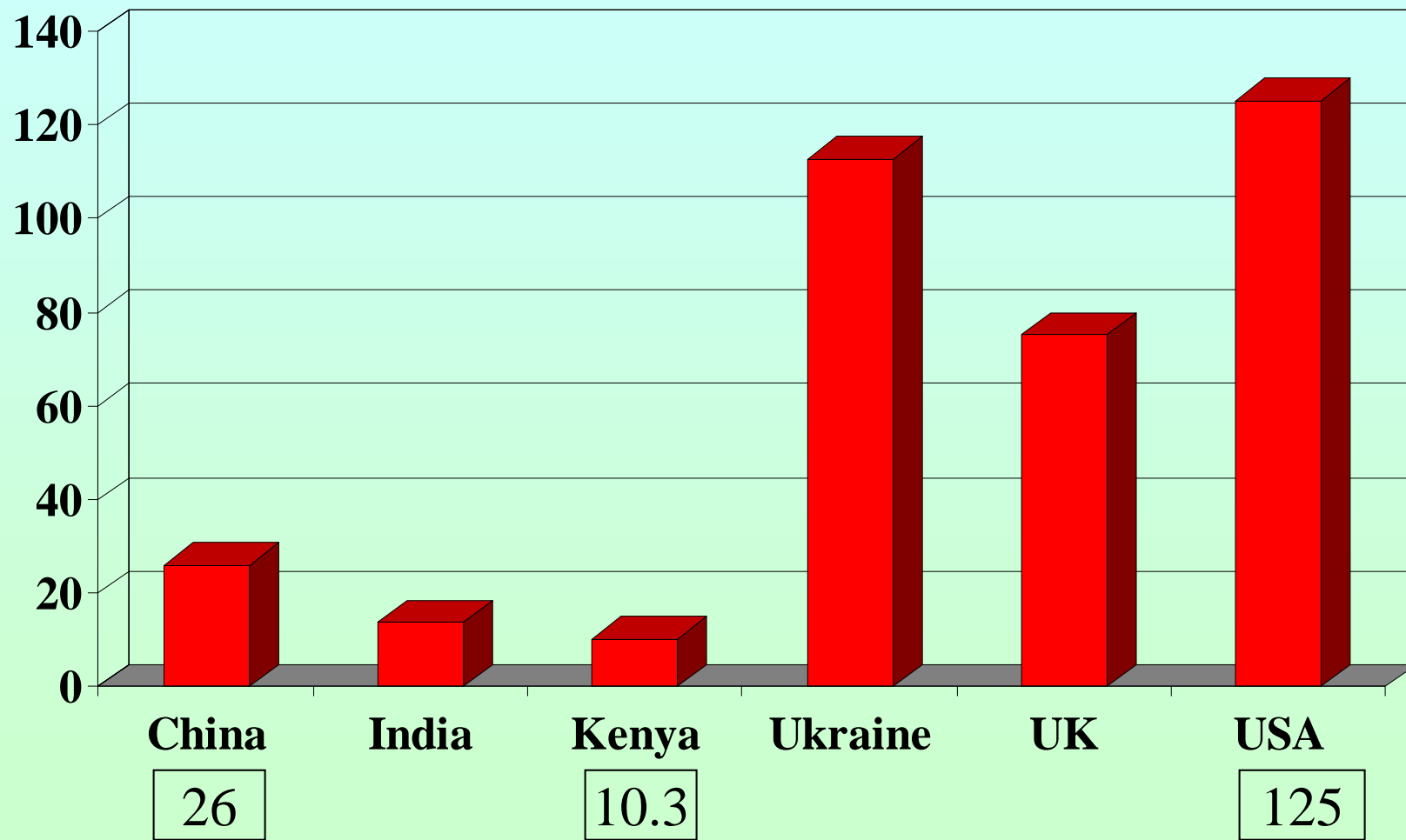


# DOCTORS PER 10,000 POPULATION (WHO 2005)

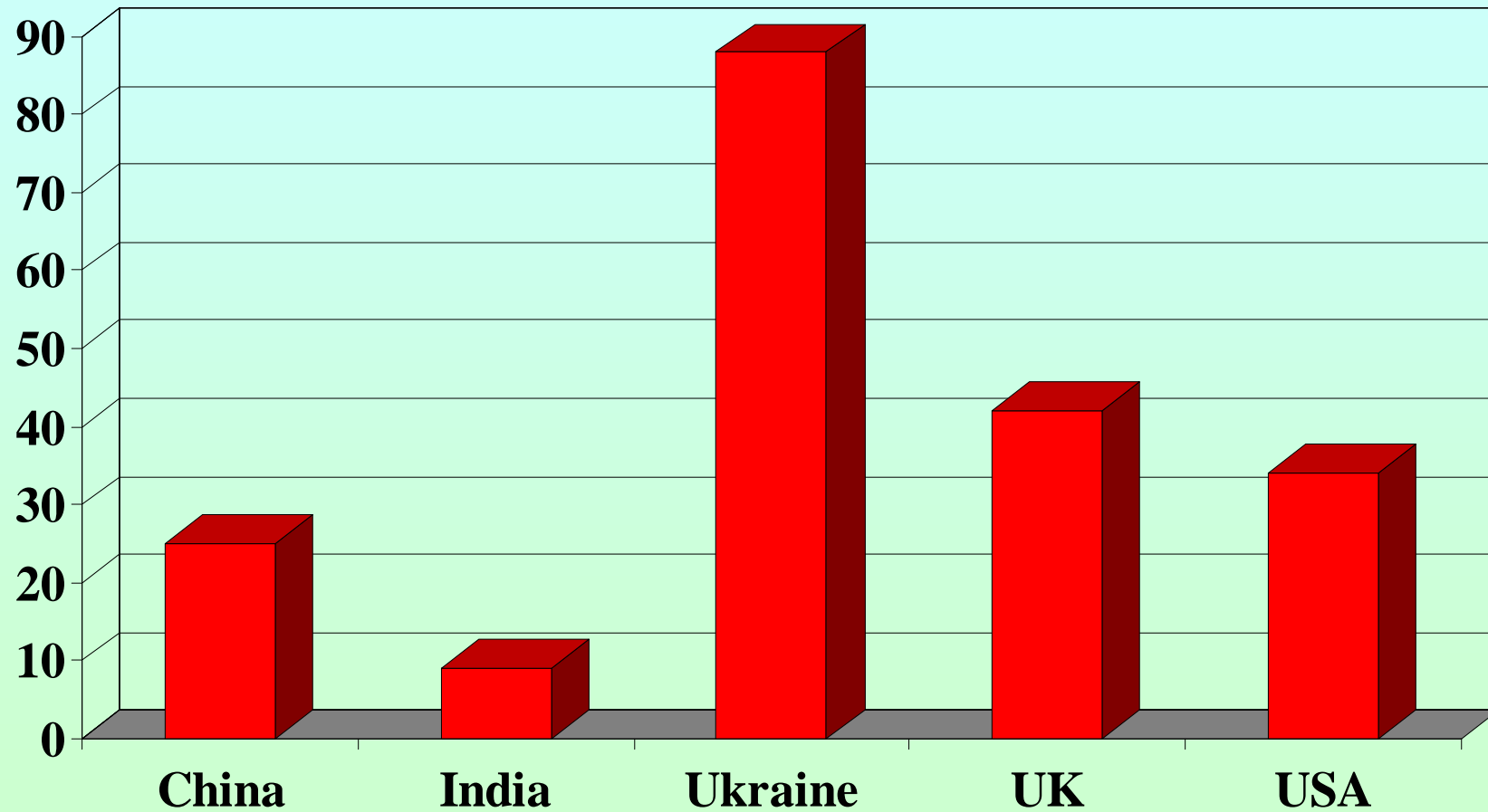




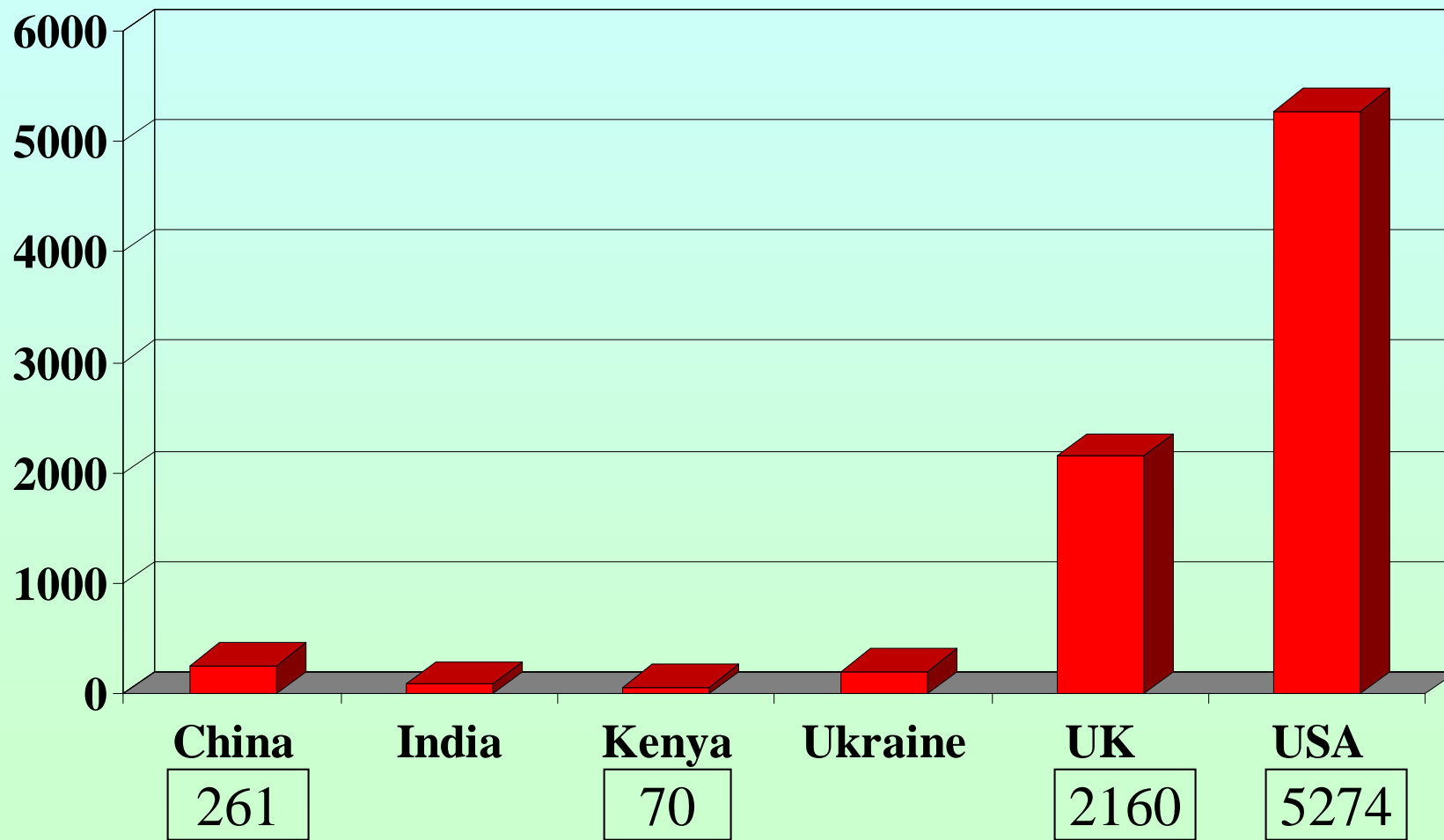
## HEALTH CARE WORKERS PER 10,000 POPULATION (WHO 2005)



## HOSPITAL BEDS PER 10,000 POPULATION (WHO 2005)

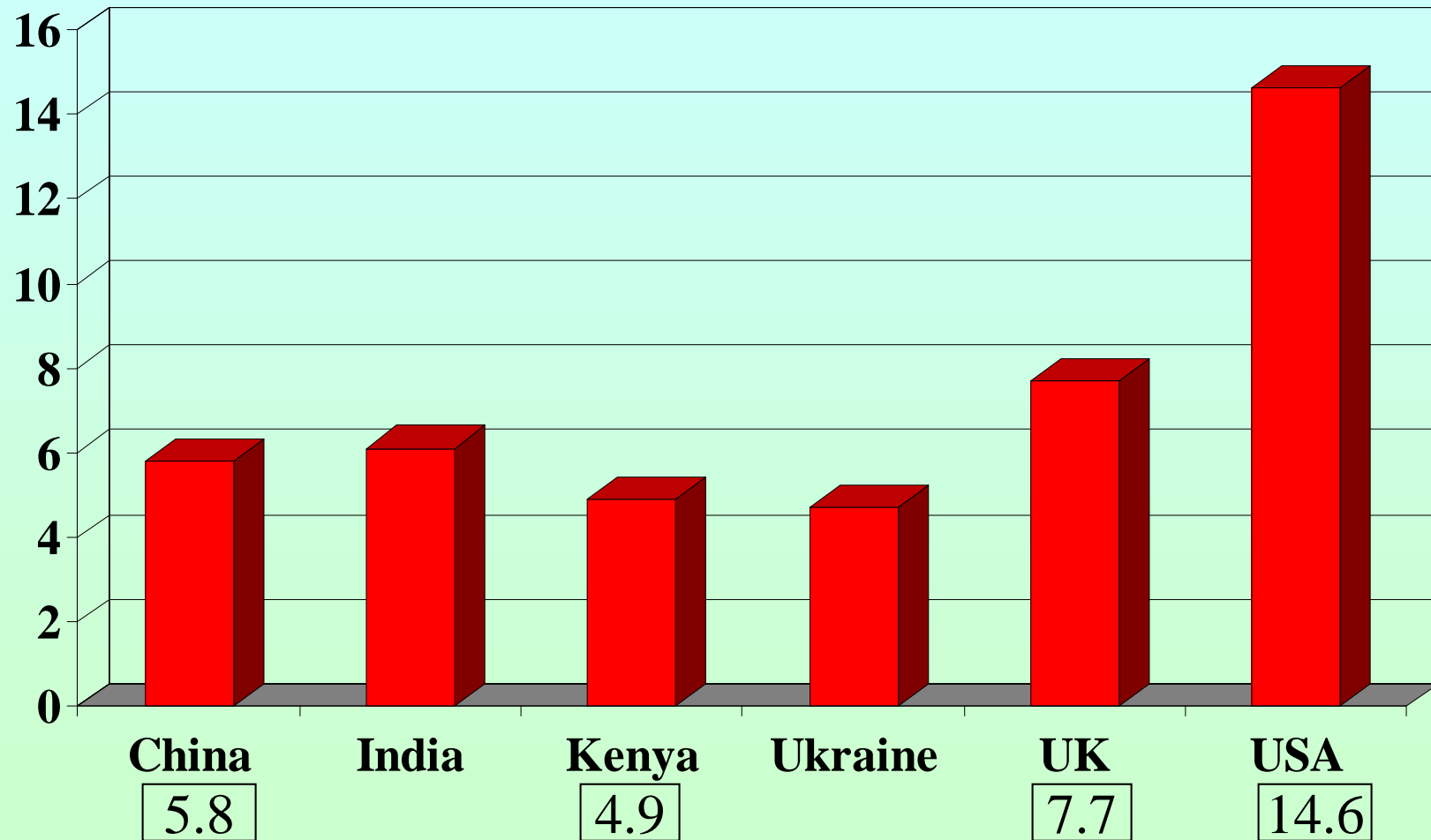


## HEALTH CARE SPENDING (\$) PER PERSON SELECTED COUNTRIES (WHO 2005)

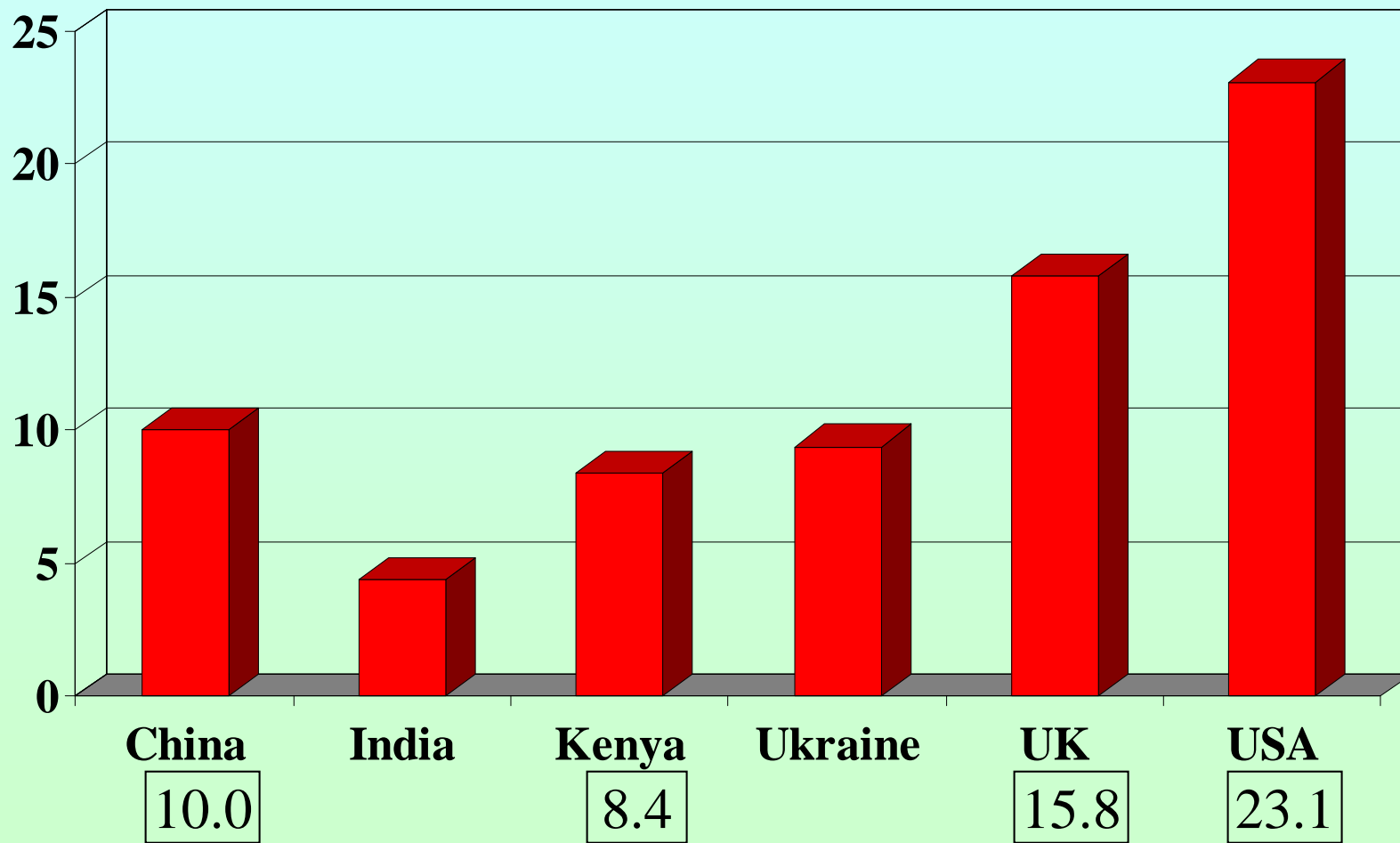




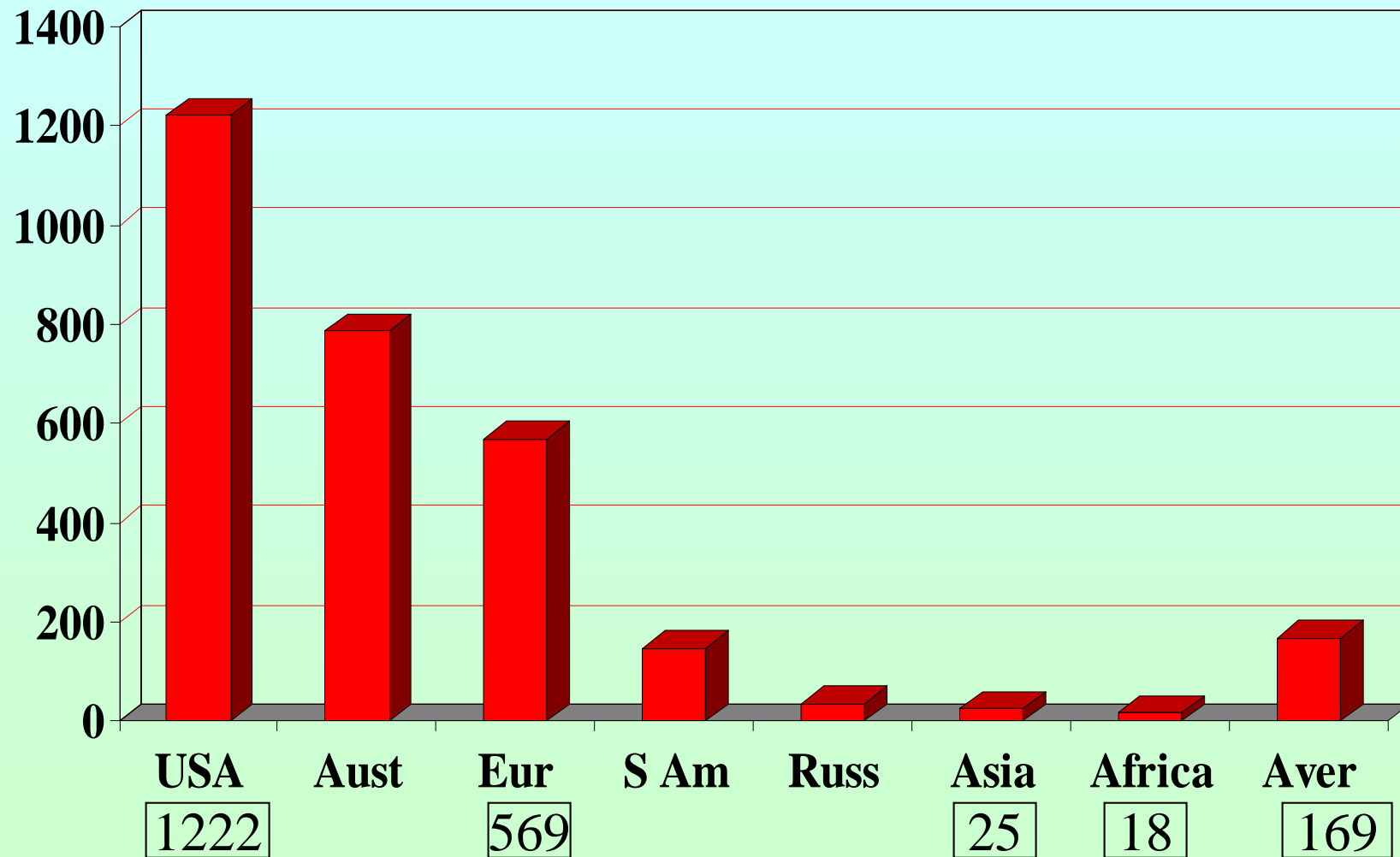
# GOVERNMENT SPENDING AS PERCENTAGE OF GDP (WHO 2005)



# HEALTH CARE SPENDING AS PERCENTAGE OF TOTAL GOVERNMENT SPENDING (WHO 2005)

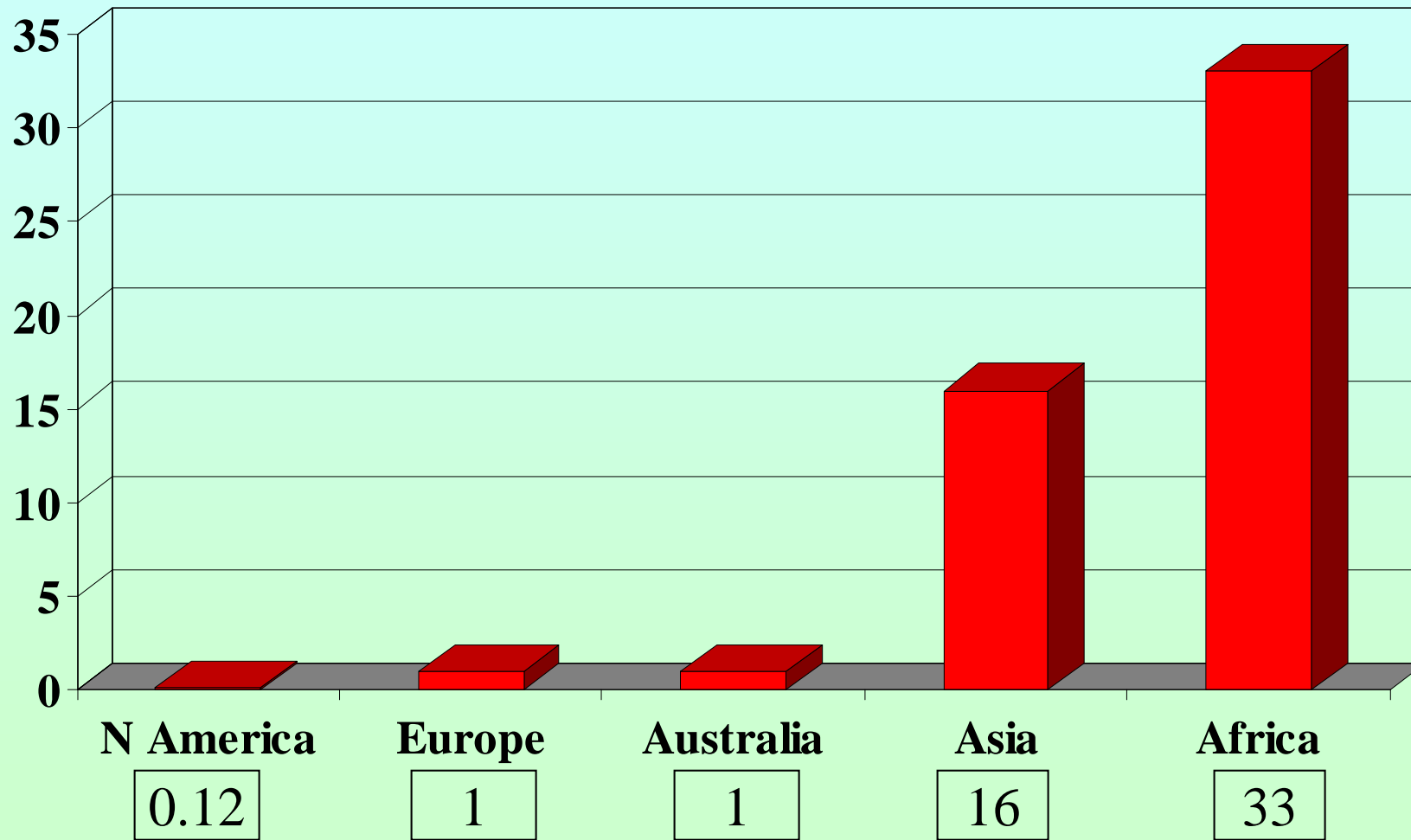


# OPEN-HEART OPERATIONS PER MILLION POPULATION (2002)

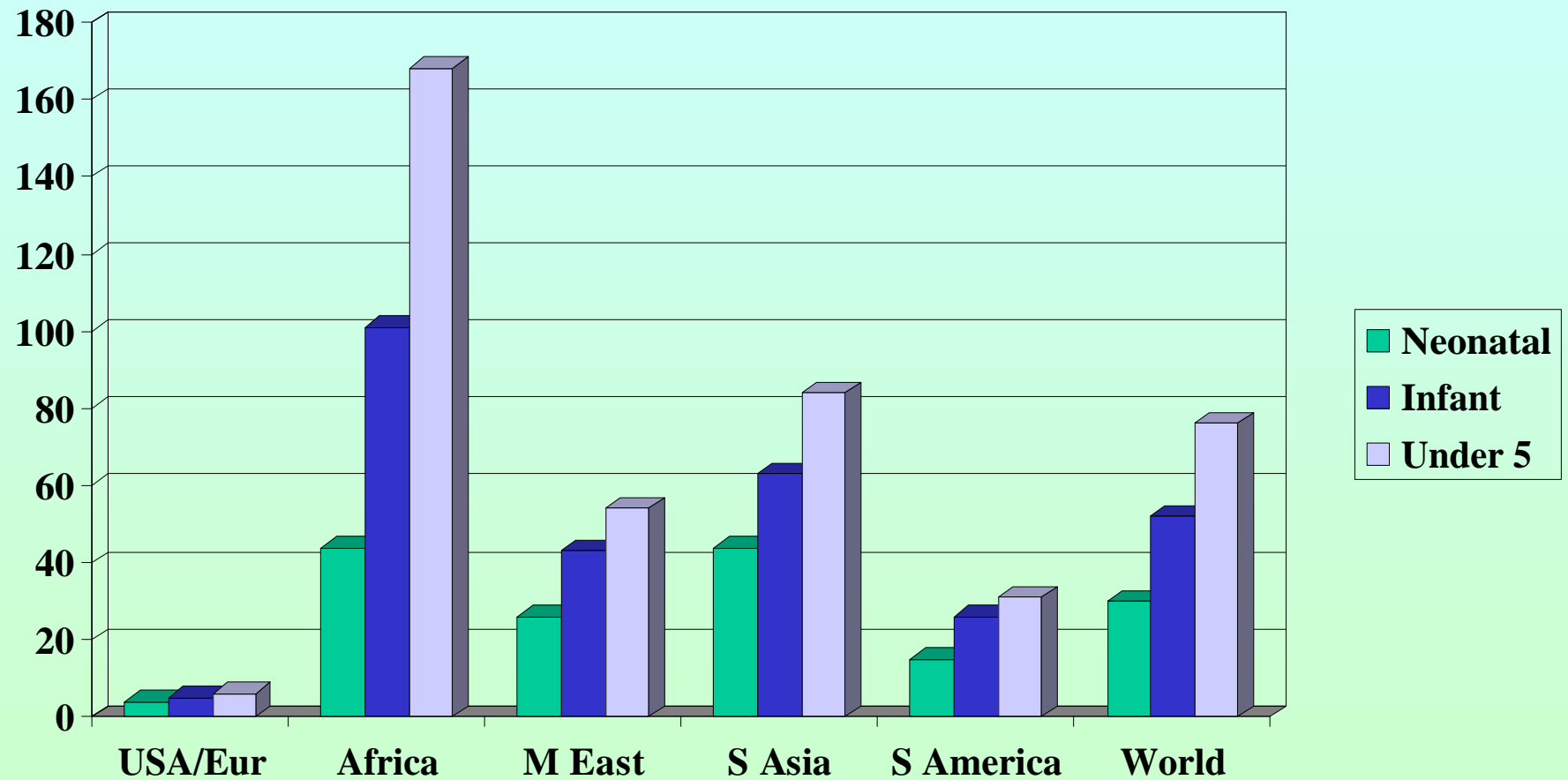




## MILLIONS OF POPULATION PER CARDIAC CENTRE (2002)



# NEONATAL, INFANT & UNDER-5 MORTALITY (PER 1000 LIVE BIRTHS, UNICEF 2007)



# INTERNATIONAL CARDIAC SURGICAL PROGRAMMES

CARDIAC DIAGNOSIS  
AND TREATMENT  
IS VERY EXPENSIVE



# CARDIAC CARE CHARITIES

- CHAIN OF HOPE (UK)
- HEARTS FOR ALL ( GENEVA)
- SAVE A CHILD'S HEART FOUNDATION (ISRAEL)
- PROJECT HOPE ( SHANGHAI)
- INTERNATIONAL CHILDREN'S HEART FOUNDATION (USA)
- CHILDREN'S HEARTLINK (USA)
- MEAK (MEDICAL AND EDUCATIONAL AID TO KENYA) (UK)

# INTERNATIONAL MEDICAL MISSIONS MOTIVATION

- HUMANITARIAN
- EDUCATION
- POLITICAL
- RELIGIOUS
- ADVENTURE

# HUMANITARIAN CARDIAC CARE PROJECTS

- TRANSPORT CHILDREN TO CENTRES OF EXCELLENCE (EXPENSIVE)
- TRAIN DOCTORS, NURSES, TECHNICIANS IN CENTRES OF EXCELLENCE TO RETURN
- SEND SURGICAL TEAMS TO DEVELOPING COUNTRIES
- ESTABLISH REGIONAL CENTRES IN DEVELOPING COUNTRIES



# INTERNATIONAL CARDIAC SURGICAL MISSIONS

- LESS EXPENSIVE PER PATIENT TREATED
- TRAIN LOCAL SURGEONS ETC
- ENABLE ONGOING LOCAL DIAGNOSTIC AND BASIC CARE
- DIFFICULTY IDENTIFYING SUITABLE FACILITY
- OBTAINING NECESSARY PERMISSION TO WORK
- MAINTENANCE/SERVICING OF DONATED EQUIPMENT
- ?LASTING IMPACT

# INTERNATIONAL CARDIAC SURGICAL MISSIONS

## SUSTAINABILITY

- TRAIN LOCAL SURGEONS, NURSES, TECHNICIANS
- RAISE OVERALL QUALITY OF HEALTH CARE
- ENCOURAGE REGIONAL HUBS TO CONCENTRATE EXPERTISE AND MAINTAIN PROFICIENCY
- CONTINUING INTERNATIONAL ASSISTANCE AND PARTNERSHIP

1944

## BLALOCK-TAUSSIG SHUNT

A. BLALOCK



H. TAUSSIG



# 1947

ALFRED BLALOCK, INVITED BY R.C. BROCK  
PERFORMED THE FIRST B-T SHUNTS AT GUY'S  
(At least one remains alive and well in 2007)



# 1983

ALAN YATES F.R.C.S. GUYS LONDON  
FIRST CARDIAC SURGERY IN MALTA  
SUBSEQUENT VISITS FORMED BASIS OF AN  
ESTABLISHED UNIT IN MALTA

A. YATES



D. ROSS

# Dr NORWOOD TEACHING Mr D. ANDERSON THE NORWOOD OPERATION AT GUY'S 1995





# CIVILISATION

“THE MARK OF A CIVILISED SOCIETY IS  
THAT WHICH TAKES CARE OF ITS  
WEAKEST MEMBERS”

ALAN YATES F.R.C.S. SENIOR CARDIAC  
SURGEON, GUYS HOSPITAL 1969-1989

# SOCIETY

POLITICAL/RELIGIOUS/CULTURAL/RACIAL  
ISSUES SPLIT THE WORLD POPULATION  
INTO SEPERATE SOCIETYS.

DISEASE (HEART OR OTHER) DOES NOT  
RECOGNISE THOSE BOUNDARIES.

# WORLD SOCIETY

IN HEALTHCARE THE WORLD MUST BE VIEWED AS A SINGLE SOCIETY OF HUMAN KIND.

“CIVILISATION” DEMANDS THAT WE TRY TO TAKE CARE OF ITS WEAKEST MEMBERS:- CHILDREN.

# WORLD HEART FOUNDATION (1999) (CTSNET.ORG)

- 34 AFFILIATED HUMANITARIAN ORGANISATIONS
- 7 AFFILIATED INDIVIDUAL VOLUNTEERS

WORLD HEART FOUNDATION  
(EST 1999)  
WASHINGTON D.C.

- CO-ORDINATION OF OTHER SIMILAR ORGANISATIONS
- EDUCATION AND TRAINING OF MEDICAL PRACTITIONERS
- FOSTER A SPIRIT OF CONCERN, COMMUNITY, ACTIVISM LEADING TO LIFELONG SERVICE
- PROVIDE FUNDING OPPORTUNITIES FOR AFFILIATED ORGANISATIONS
- DEVELOP A COMMUNITY OF PRACTICE FOR CONTINUING EDUCATION IN DIFFERING CULTURAL AND HEALTHCARE ENVIRONMENTS

# WORLD HEART FOUNDATION MISSION

“ TO DECREASE THE GLOBAL  
INEQUITY IN THE DELIVERY OF HIGH  
QUALITY HEALTH CARE BY  
IMPROVING THE ACCESS THAT THE  
UNDERSERVED HAVE TO CARDIAC  
SURGERY”



# PERSONAL INTERNATIONAL CARDIAC SURGERY MISSIONS

<b>INDIA</b>	x2	1989 & 1997
<b>PAKISTAN</b>	x4	93-99
<b>MALTA</b>	x4	91-94
<b>TUNISIA</b>	x3	92-94
<b>EGYPT</b>	x3	92-95
<b>PORTUGAL</b>	x1	2001
<b>PERU</b>	x1	1995
<b>KENYA</b>	x7	2002-2007

# MEDICAL & EDUCATIONAL AID to KENYA (MEAK.ORG)/ GUY' HOSPITAL



KENYATTA NATIONAL HOSPITAL, NAIROBI

# INTERNATIONAL CARDIAC SURGICAL MISSIONS

## PURPOSE

- OFFER CARDIAC CARE TO THOSE WITH NO ACCESS
- TO SUPPORT LOCAL INITIATIVE
- TO ADVISE ON DEVELOPMENT
- TO TEACH (DIAGNOSIS, TREATMENT, AFTERCARE)
- TO LEARN

# MEAK/GUY'S CARDIAC SURGICAL MISSION

## THE TEAM

- CONSULTANT SURGEON, ANAESTHETIST, PAEDIATRIC CARDIOLOGIST
- SCRUB NURSE, ANAESTHETIC TECHNICIAN
- PERFUSIONIST, ECHO TECHNICIAN
- 4 PAEDIATRIC INTENSIVE CARE NURSES
- WARD NURSE
- PAEDIATRIC INTENSIVIST (SENIOR RESIDENT)
- SECRETARY
- MEDICAL STUDENTS (AT OWN EXPENSE)

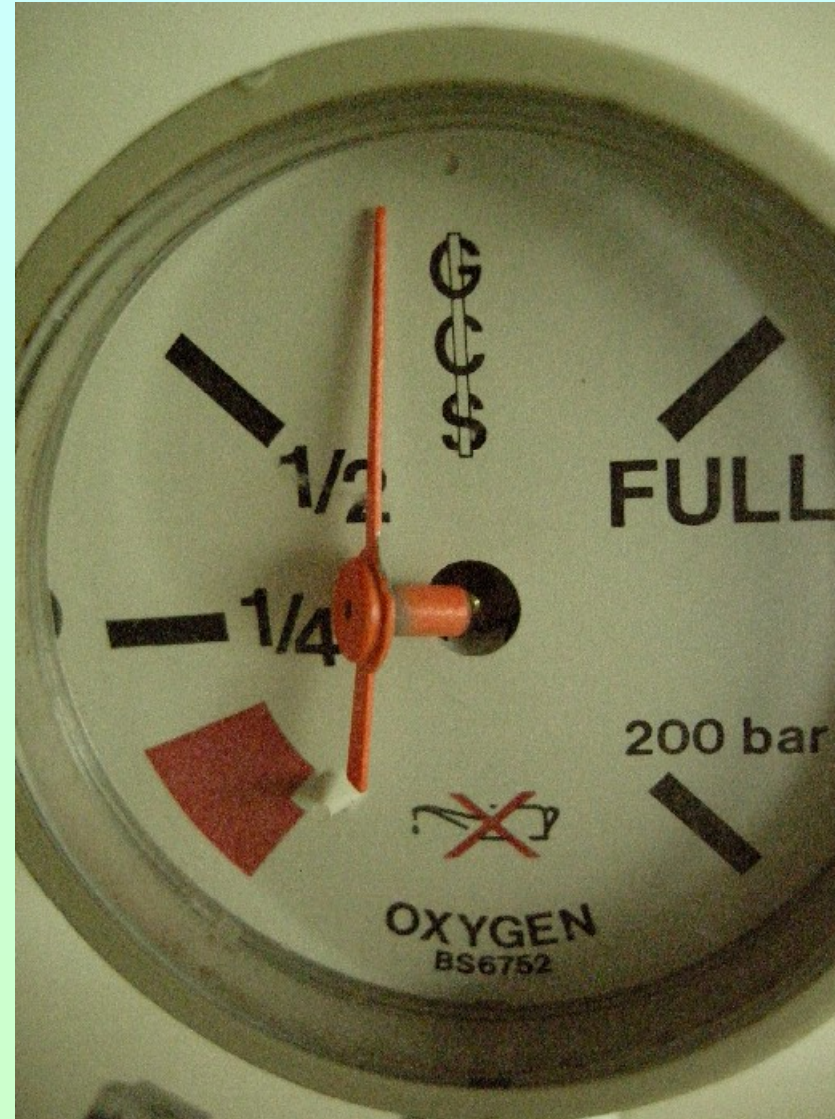


# INTERNATIONAL CARDIAC SURGICAL MISSIONS

## VERY BASIC EQUIPMENT



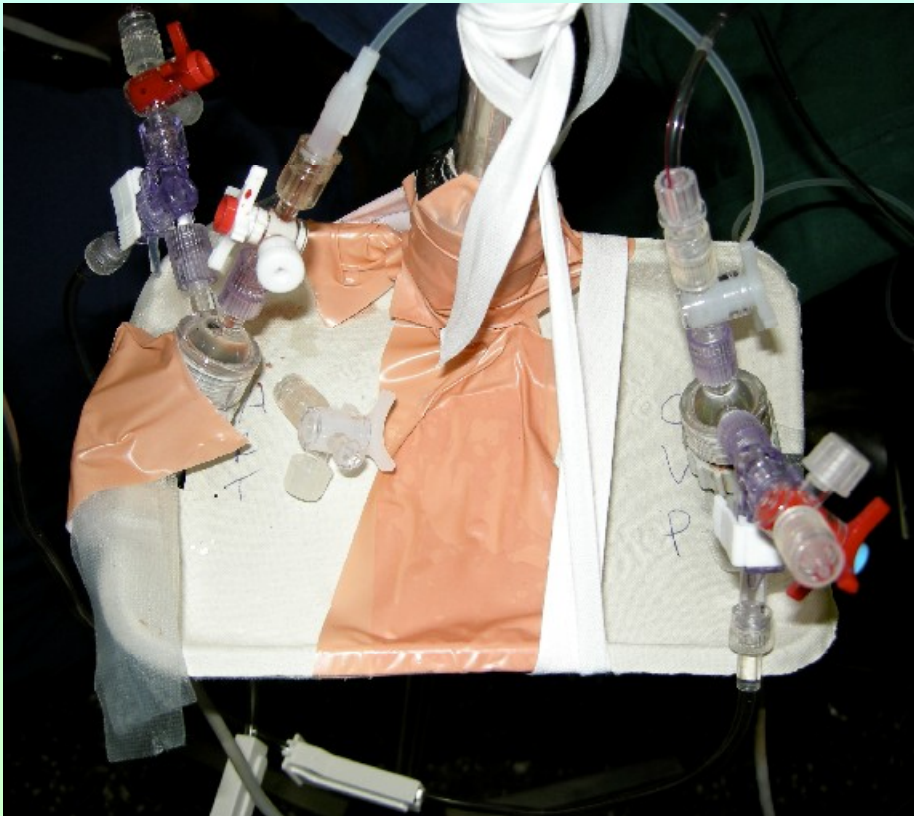
AUTOCLAVE





# INTERNATIONAL CARDIAC SURGICAL MISSIONS EQUIPMENT

TRANSDUCERS

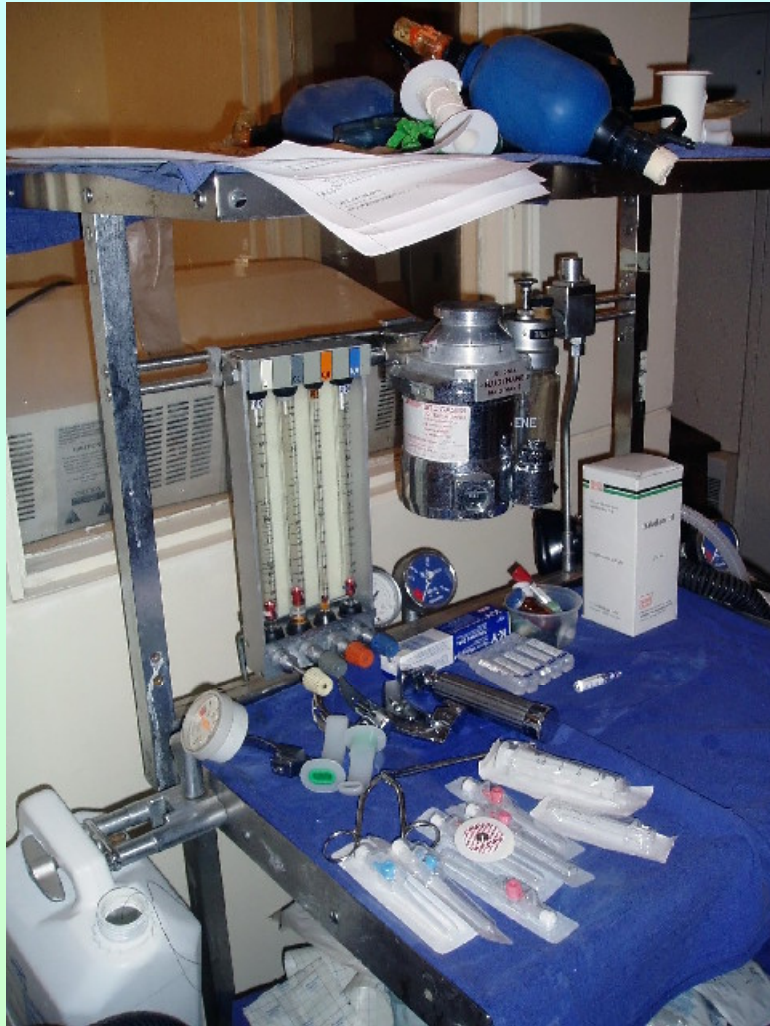


12-LEAD ECG





# BASIC FACILITIES



CATH-LAB  
ANAESTHETIC MACHINE



SCBU

# ITU TEACHING

- USE APPROPRIATE TIDAL VOLUMES
- FLUID RESTRICTION POST CARDIAC SURGERY
- REGULAR ENDOTRACHEAL SUCTION  
(PHYSIO VISITS TWICE BY DAY ONLY)
- ANALGESIA & SEDATION (PARACETAMOL, MORPHINE). NOT RESTRAINT BY TYING TO BED.
- NURSES CAN REMOVE CHEST DRAINS
- NURSE/PHYSIO/DOCTOR INTERACTIONS (BREAK DOWN HIERARCHIAL BARRIERS)

# INTERNATIONAL CARDIAC SURGICAL MISSIONS INTENSIVE CARE LESSONS

## SECURE the E-T TUBE



NASAL



ORAL

# INTERNATIONAL CARDIAC SURGICAL MISSIONS

## ITU TEACHING

- ALARMS HAVE A PURPOSE (SEVERE HYPOXIC BRAIN DAMAGE DUE TO DISCONNECTION)
- RESPOND IMMEDIATELY TO OXYGEN FAILURE (AMBU BAG)
- STAY BY THE BEDSIDE



# INTERNATIONAL CARDIAC SURGICAL MISSIONS INTENSIVE CARE LESSONS

## STAY AWAKE AT NIGHT



# LEARNING

- Pathology “I have never seen 2 Fallots squatting to play” (Hb 23.5)





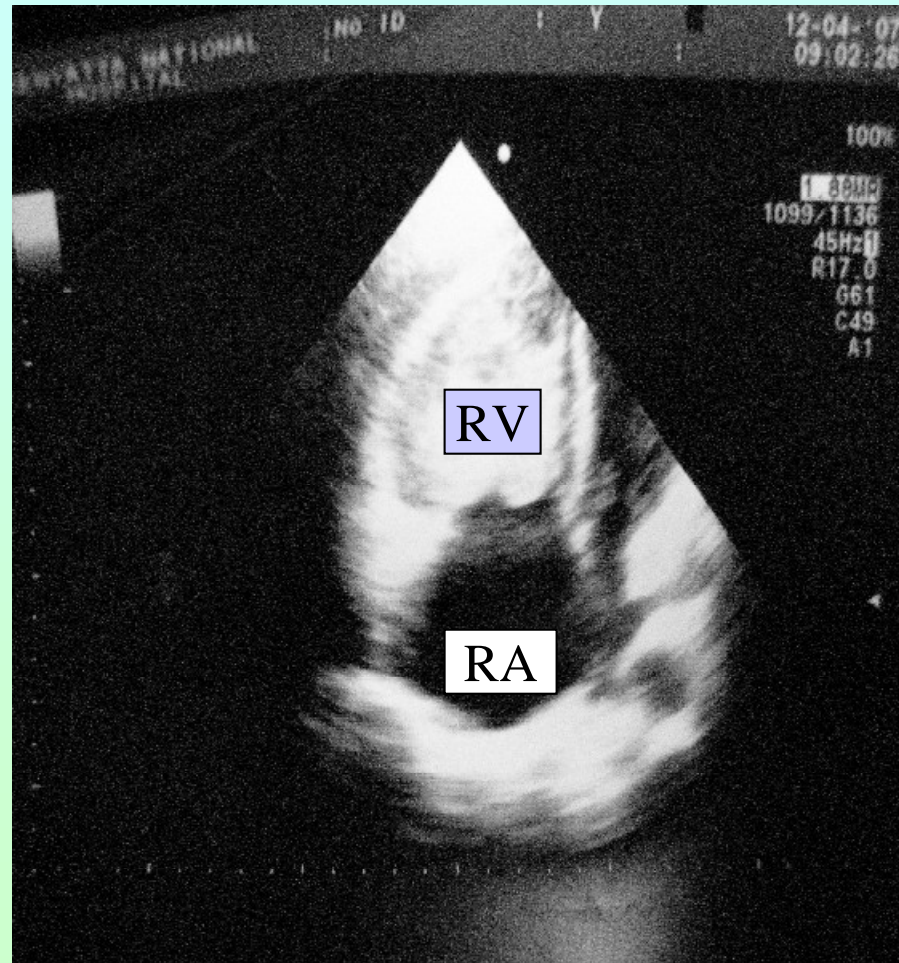
# LEARNING PATHOLOGY CAN OFTEN BE ADVANCED





# LEARNING

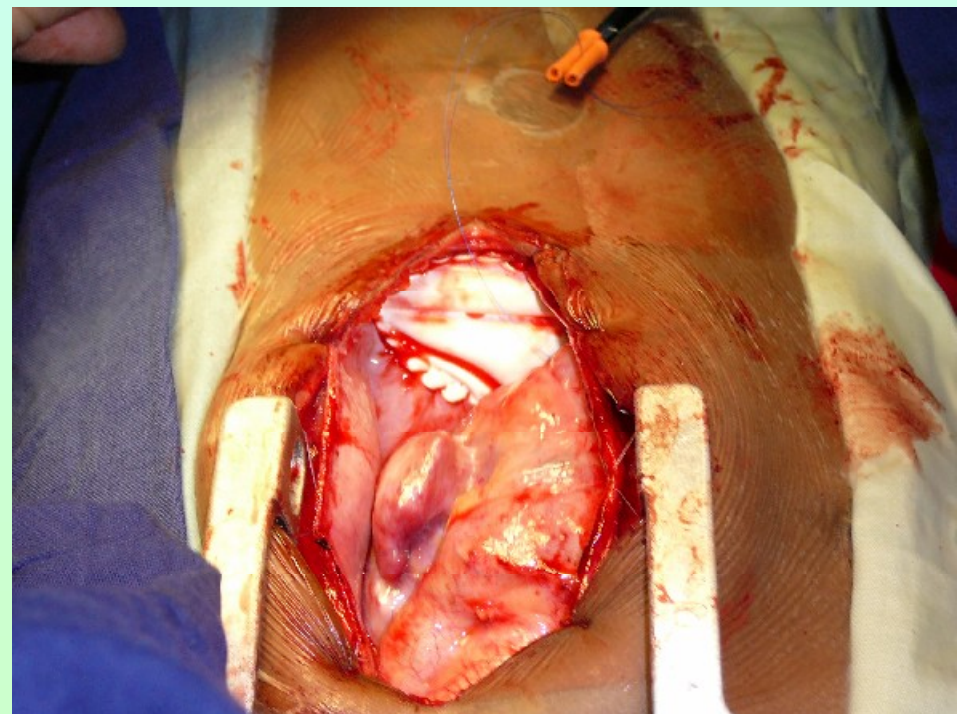
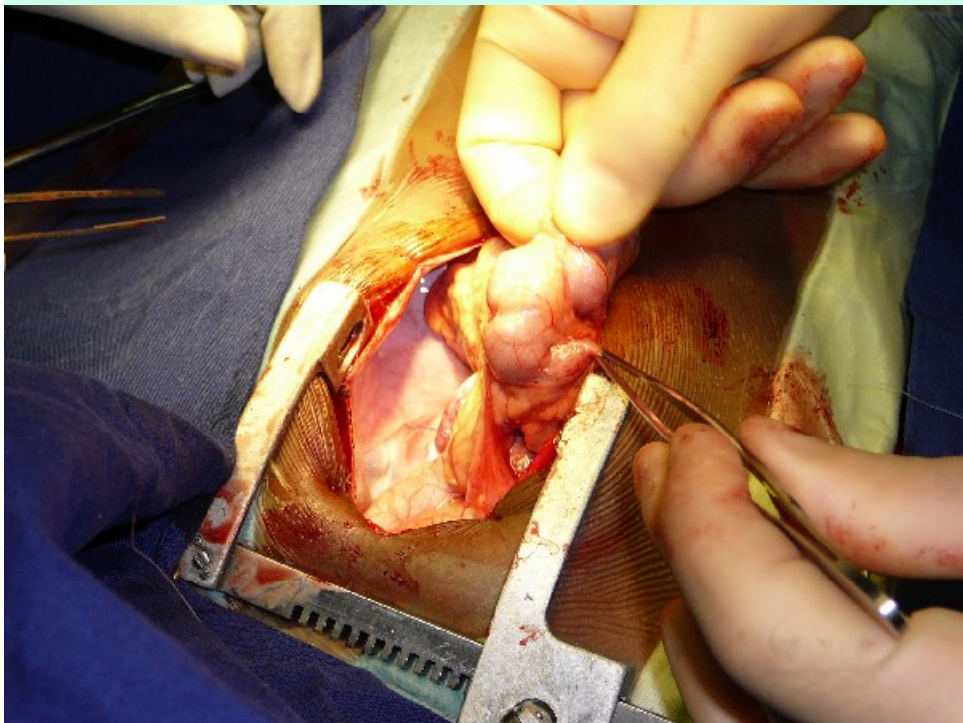
- Right Ventricle Rhabdomyosarcoma



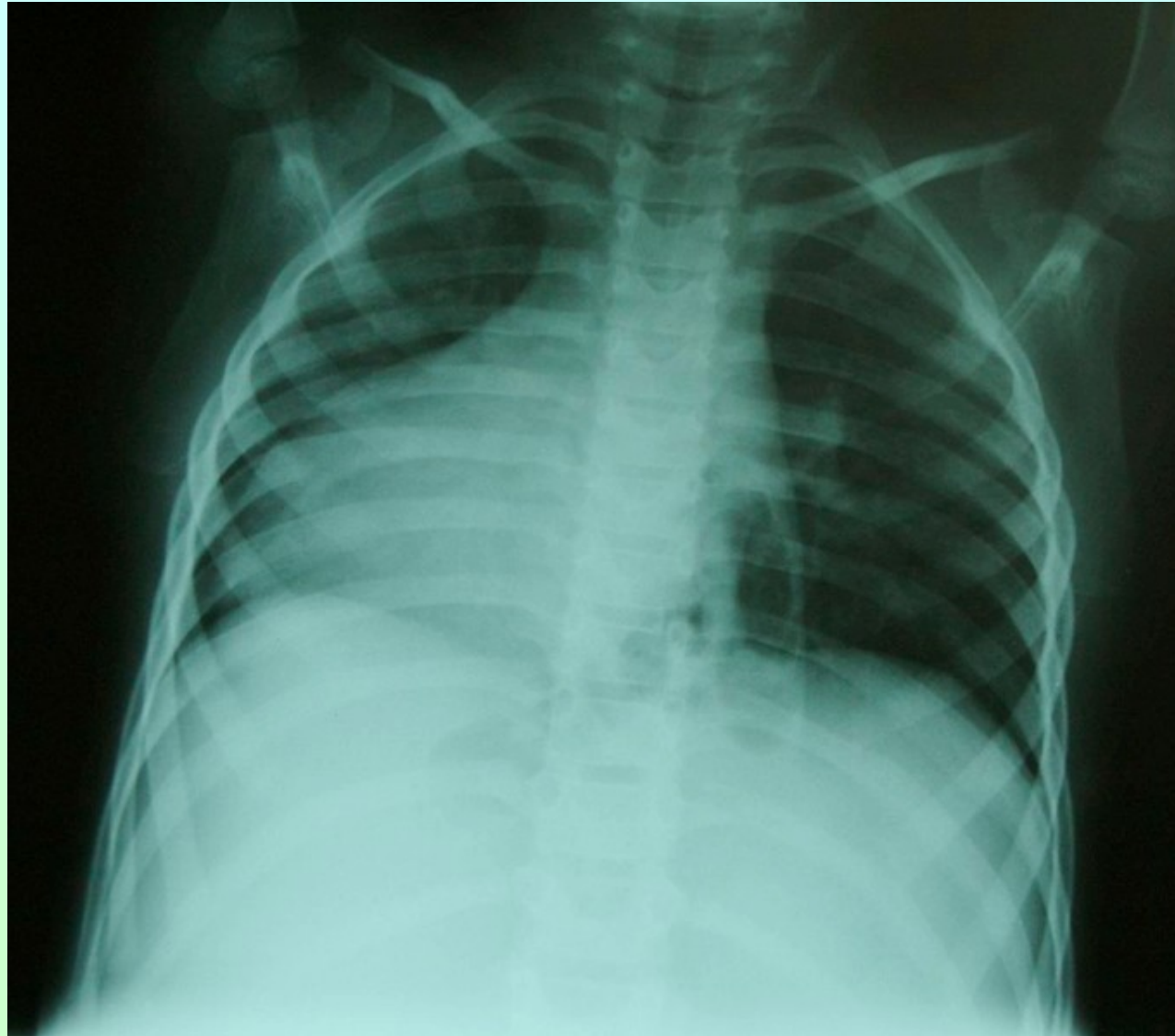
# LEARNING

## Surprises

### BOWEL IN THE PERICARDIUM



# DIAPHRAGMATIC HERNIA TO PERICARDIUM



# ITU SURPRISES

WHAT DO YOU DO WHEN THE LIGHTS GO OUT?





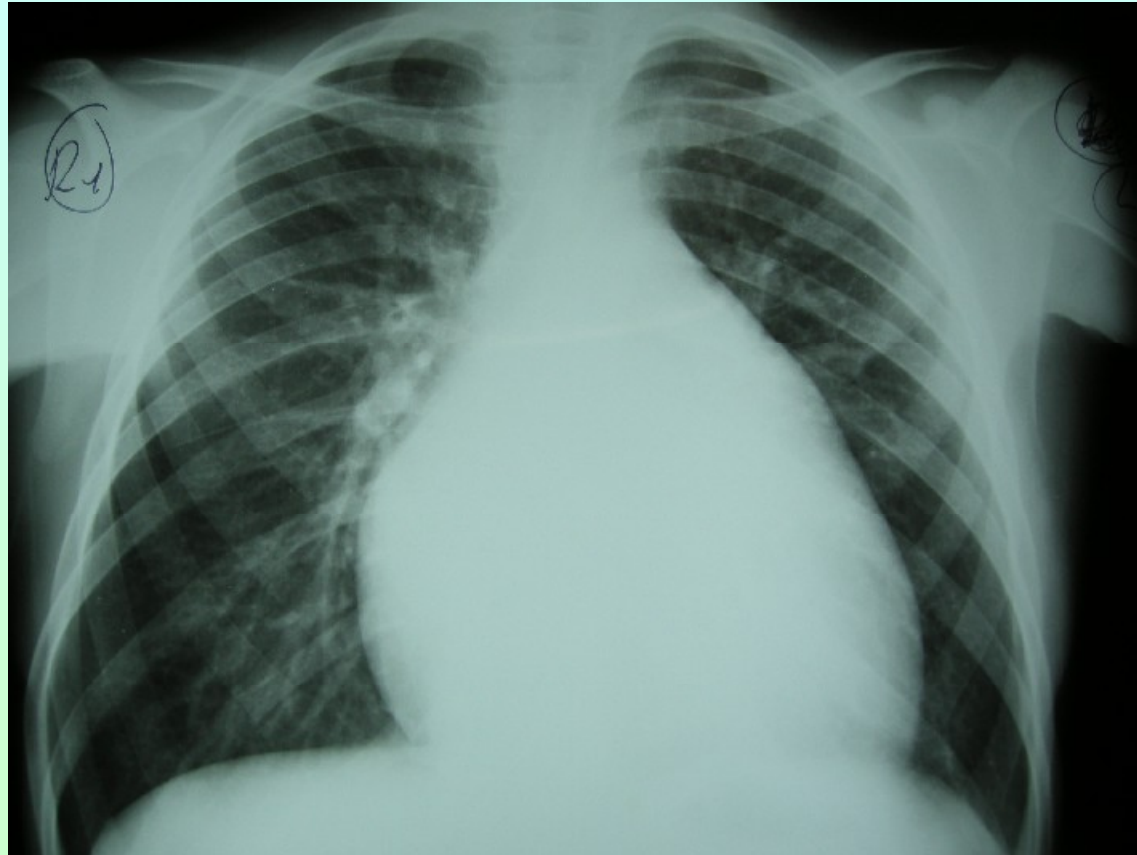
# ITU SURPRISES

## REGURGITATED INTESTINAL WORM



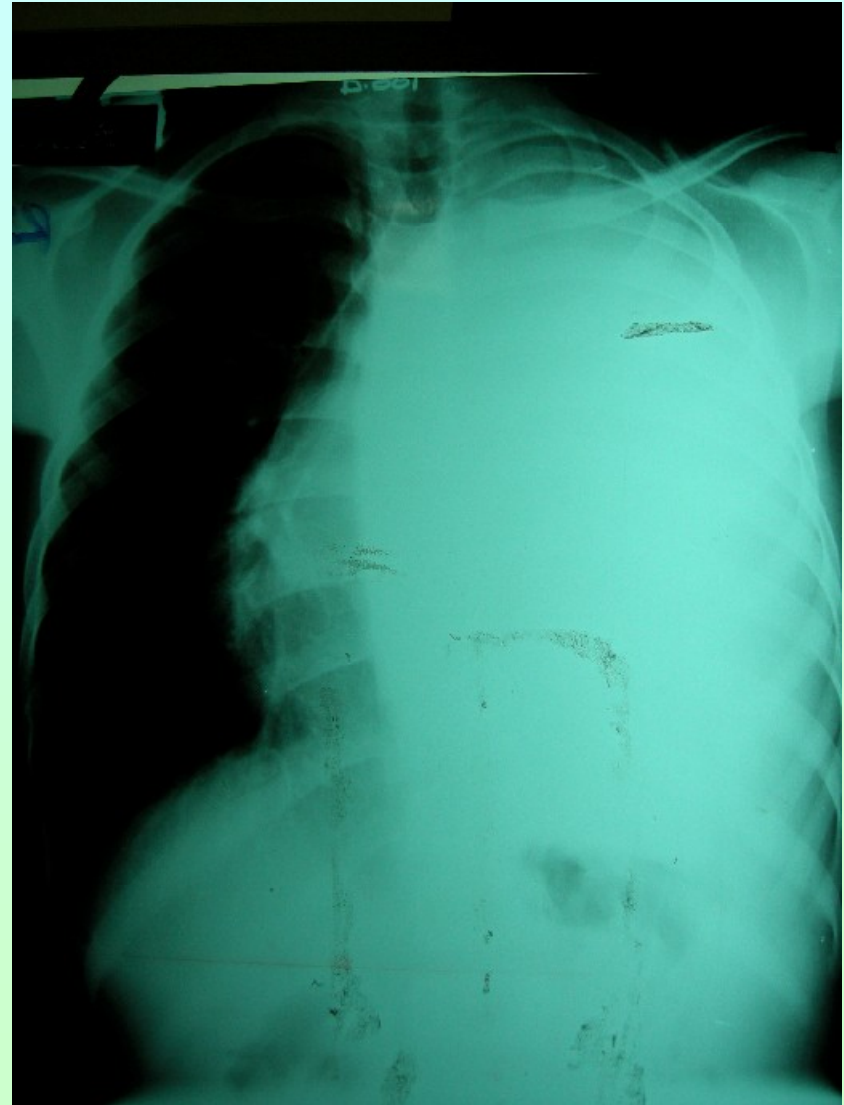
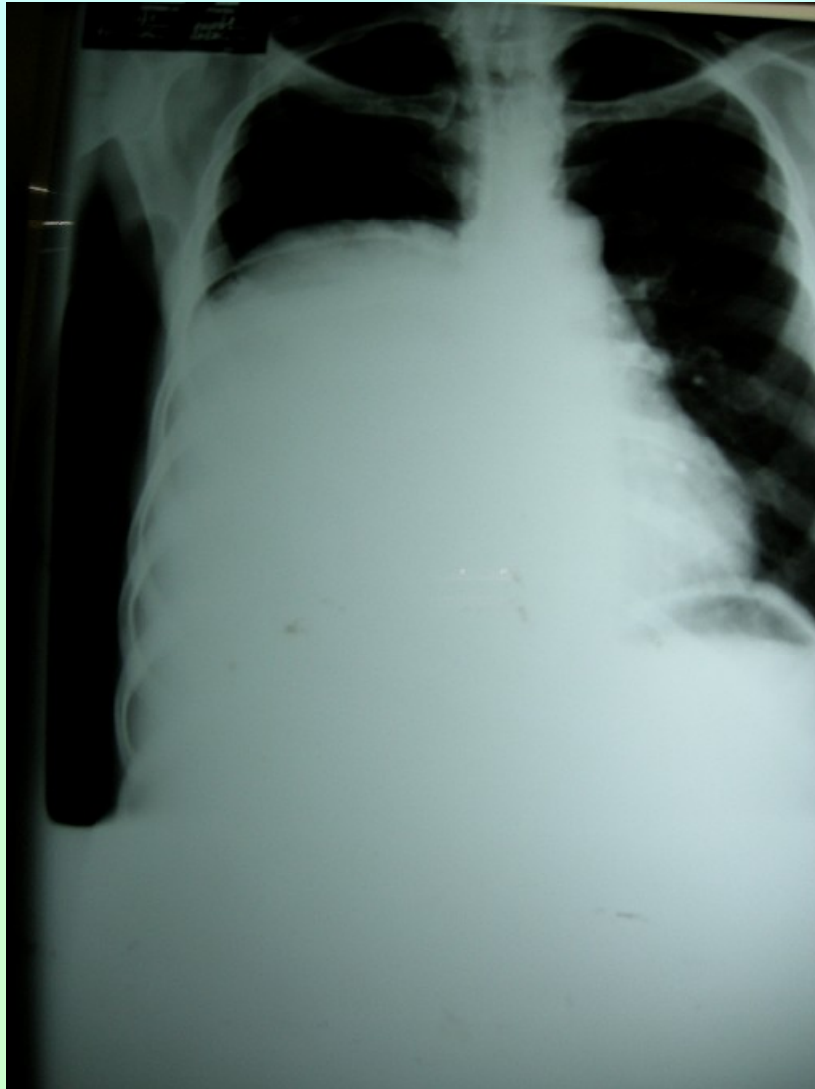
# LEARNING

## CARDIOMEGALY (P-AVSD)



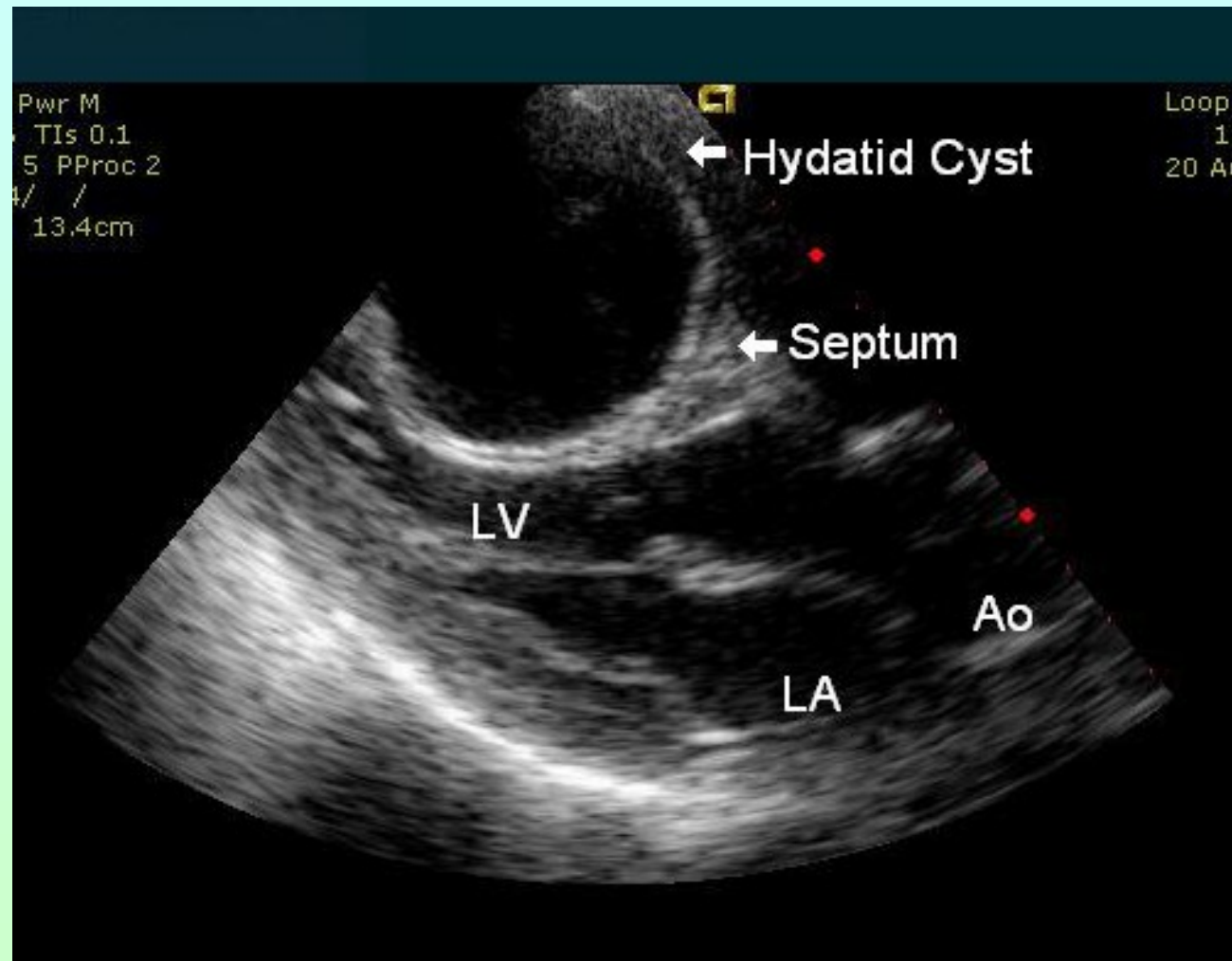
# LEARNING

## ADVANCED HYDATID DISEASE OF THE LUNG



# LEARNING

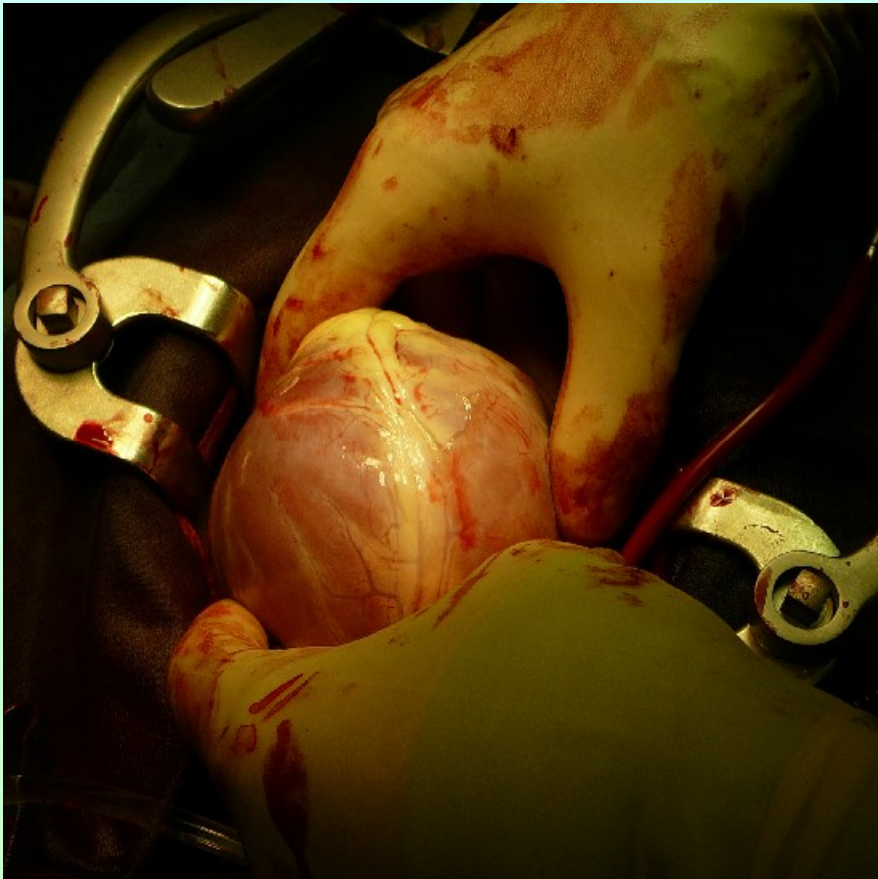
## HYDATID DISEASE OF THE HEART



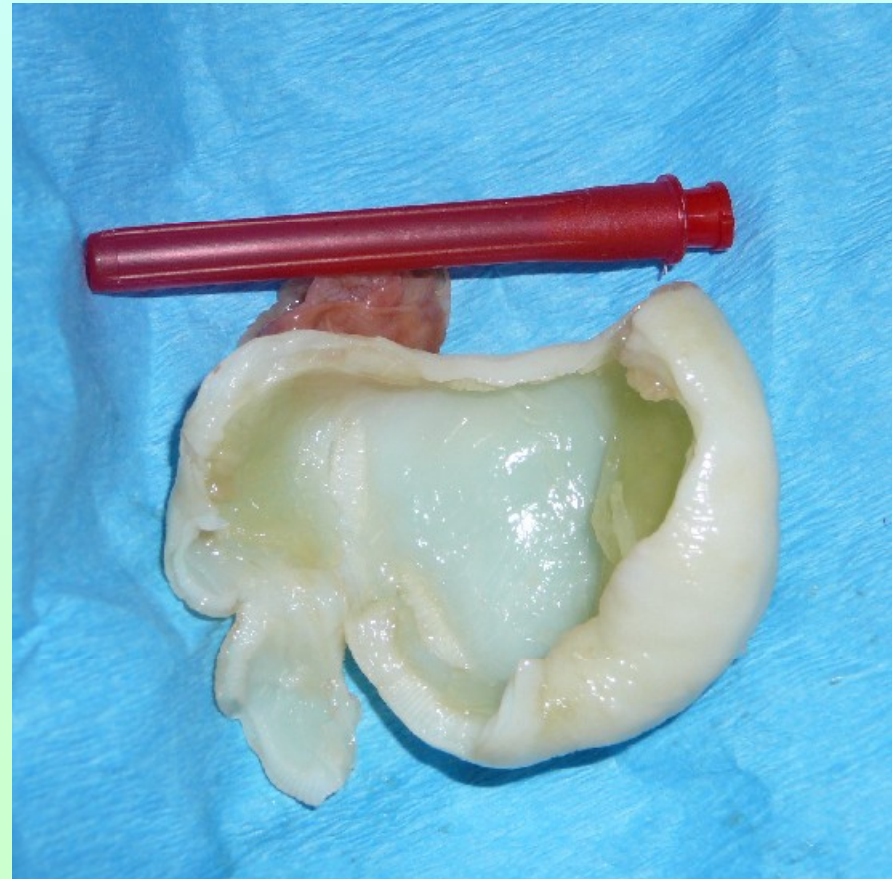


# LEARNING

## HYDATID DISEASE OF THE HEART



LV SEPTAL HYDATID CYST



ECTOCYST

# INTENSIVE CARE LEARNING

- EXERCISE CLINICAL SKILLS
- UREA/ELECTROLYTES TAKE 24 HRS
- CXR -18 HOUR TURNAROUND
- NO 12-LEAD ECG (OUT OF PAPER)
- NO LACTATE MEASUREMENTS
- ONE SATURATION MONITOR
- TRANSDUCERS IN SCARSE SUPPLY

# INTENSIVE CARE TEACHING/LEARNING

- CLINICAL and PERSONAL SKILL UTILISATION
- THE ART OF PERSUASION
- TIMING OF EXTUBATION (NURSE-LED)
- RESUSCITATION OF CARDIAC ARREST IS WORTHWHILE AND NOT ALWAYS DIFFICULT

# MEAK/GUY'S CARDIAC SURGICAL MISSIONS ACHIEVEMENTS

- AVERAGE 20 OPERATIONS BY TEAM OR ASSISTING/FUNDING LOCAL SURGEONS
- OUTPATIENT REVIEW OF 200+ CARDIAC CASES
- INTERVENTIONAL CATHETERISATION (PULMONARY VALVOTOMY, DUCT OCCLUSION)
- TEACHING ECHOCARDIOGRAPHY TO LOCAL DOCTORS
- TEACHING SAFE, SIMPLE CARDIAC ANAESTHESIA
- TEACHING SAFE, SIMPLE, REPRODUCIBLE CARDIAC SURGICAL TECHNIQUE
- TOTAL COST UNDER £20,000 PER MISSION

# INTERNATIONAL CARDIAC SURGICAL MISSIONS

## MEAK/GUY'S

### APRIL 2007

- 16 OPERATIONS IN 6 DAYS
- 16 SURVIVED TO DISCHARGE
- EACH VISIT WE SEE PROGRESS
- I HOPE/BELIEVE WE MAKE A LASTING DIFFERENCE
- WE LEARNED A LOT (PERSONAL, MEDICAL, CULTURAL)
- WE HAD A GREAT TIME
- COST APPROX £1000 PER CASE



# PAEDIATRIC INTENSIVIST AND PATIENT





# INTERNATIONAL CARDIAC SURGICAL MISSIONS DID WE MAKE A DIFFERENCE?



THE IMPORTANCE OF PLAY

# INTERNATIONAL CARDIAC SURGICAL MISSIONS DID WE MAKE A DIFFERENCE?



READY FOR DISCHARGE

# INTERNATIONAL CARDIAC SURGICAL MISSIONS DO THEY HAVE A FUTURE?

- GOOD CARDIAC DIAGNOSIS AND CARE HAS IMPORTANT IMPLICATIONS FOR OVERALL HEALTH CARE
- THE PRINCIPLES OF CARDIAC SURGERY AND ANAESTHESIA HAVE IMPORTANT LESSONS APPLICABLE TO OTHER SURGICAL SPECIALTIES.
- CARDIAC INTENSIVE CARE PROVIDES A FIRM BASIS FOR INTENSIVE CARE IN GENERAL
- THE BENEFITS WILL THEREFORE BE FELT IN MANY OTHER AREAS OF EVERYDAY PRACTICE



AFRICA NEEDS AND DESERVES OUR HELP IN  
WHATEVER WAY WE CAN PROVIDE IT

