

# **Sustainability: Heart Care International A 17-Year Experience**



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Heart Care International**

**Surgeon-in-Chief  
Professor and Chairman  
Department of Surgery**

**Department of Cardiovascular and Thoracic Surgery  
Montefiore Medical Center/Albert Einstein College of Medicine**

# Heart Care International

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- **Not-for Profit**
  - **Tax exempt 501(c)3**
  - **Board of Directors**
  - **Private philanthropy**
  - **Corporate support for some supplies**
  - **HCI pays team airfare, in-country travel and meals**



# Heart Care International 17 Year Experience

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- Vision

- Train local physicians, nurses and technicians to become independent caregivers
- Provide cardiac services to indigent children and young adults in developing countries



# Heart Care International

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- **5 year commitment to each country**
- **Site selection**
  - Site visit by Chairman, Executive Director and key Team Captains
- **Medical team captains assess if goals are realistic**
- **Simultaneously evaluate government, hospital administrative and medical leadership support**





# Guatemala City, Guatemala

## October 1994

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- **45 medical staff members from several institutions:**
  - Columbia
  - Mt. Sinai (NYC)
  - Yale
  - Parkland
  - Emory
- **3 week trip**
  - Diagnostic
  - Surgical
  - Transition
- **Selected site had no open heart surgery program**
- **10,000 pounds of equipment shipped**

# Guatemala Mission

## October 1994

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### Team Members (48)



Cardiologists	4	Perfusionists	4
Surgeons	3	Physician Assistants	4
Anesthesiologists		Respiratory/Therapists	1
PICU Nurses	18	Admin/Logistics	3
OR Nurses	7		

\* Coverage 24hrs/7days during trip



# Guatemala Mission

## October 1994

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• Total Patients Screened 70 / 5 d

• Patients Catheterized 13 / 5 d

• Patients Operated 25 / 6 d

• Deaths 3

Post-Operative 2

Post-Anesthetic 1





# Guatemala Mission - October 1994

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<u>Lesions</u>	<u>Eval</u>	<u>Op</u>
VSD	21	4
ASD	11	5
TOF	8	5
TOF s/p BTS	4	1
PDA	7	4
CoA	3	2
MR s/p ARF	2	1
MS s/p ARF	2	1
AVC	2	0
PS	1	0

# Guatemala Mission - October 1994

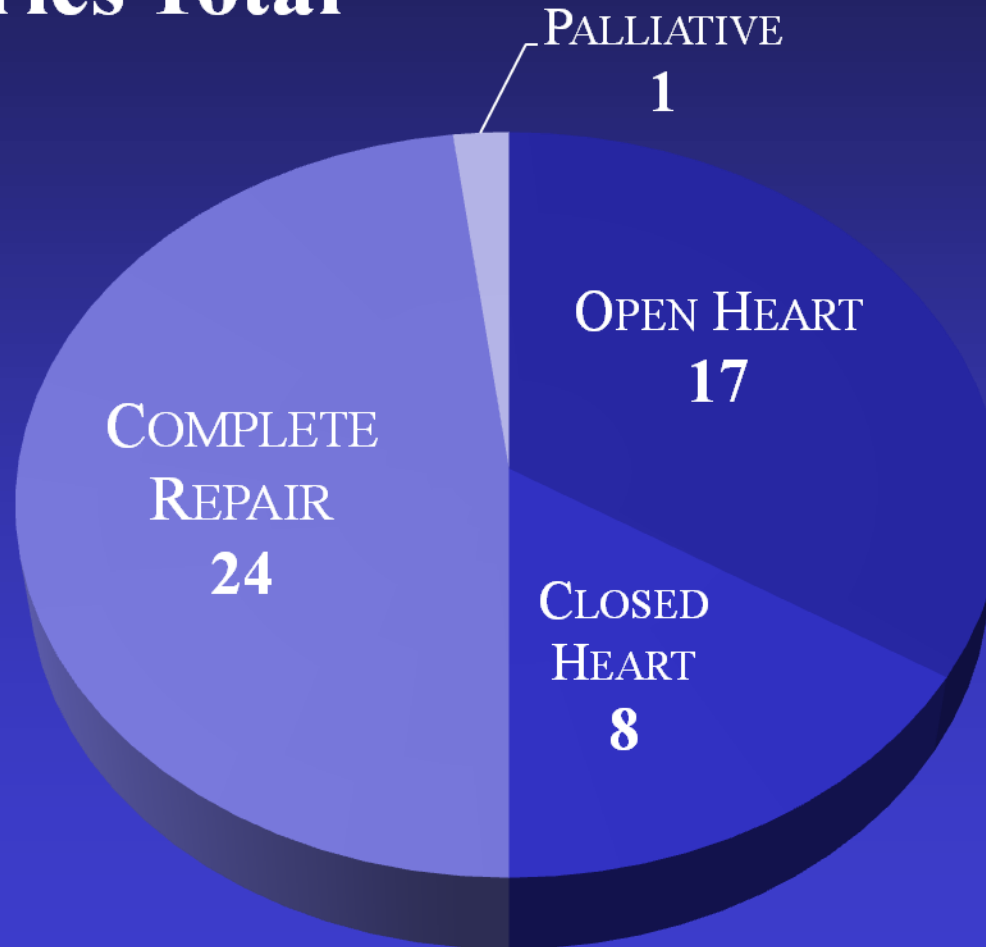
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<u>Lesions</u>	<u>Eval</u>	<u>Op</u>
TAPVR	1	1
DORV	2	0
TriAtr	2	1
SV/PA s/p Glenn	1	0
TriAtr s/p Fontan	1	0

# Guatemala Mission - October 1994

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25 Surgeries Total





# Guatemala Mission - October 1994

## Pre-Operative Patient Demographics

Age

$5.7 \pm 4.8$  yr

Range

3 mos to 19 yrs

Growth Percentiles

Ht < 5%: 56%

Wt < 5%: 48%

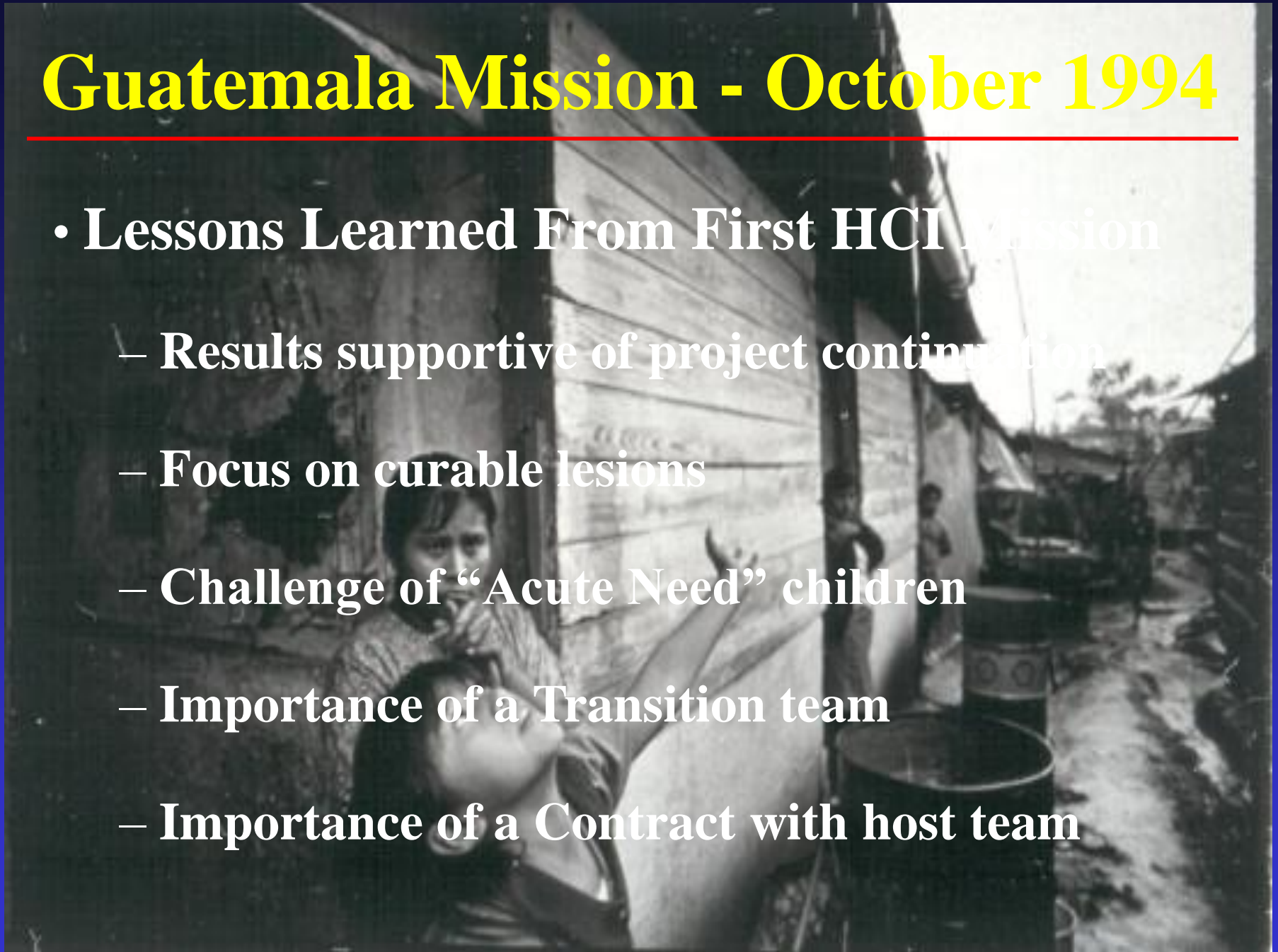
- $\frac{3}{4}$  of patients from the mountains (> 1 mile above sea level)
- **Other health problems:** Lice, Scabies, Eczema, Dental Caries, Asthma, Seizures, Cachexia, T.B.

# Guatemala Mission - October 1994

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- **Lessons Learned From First HCI Mission**

- Results supportive of project continuation
- Focus on curable lesions
- Challenge of “Acute Need” children
- Importance of a Transition team
- Importance of a Contract with host team



# Heart Care International

## Guatemala (1994-1998)

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• Total Patients Screened 315

• Total Operations 220\*

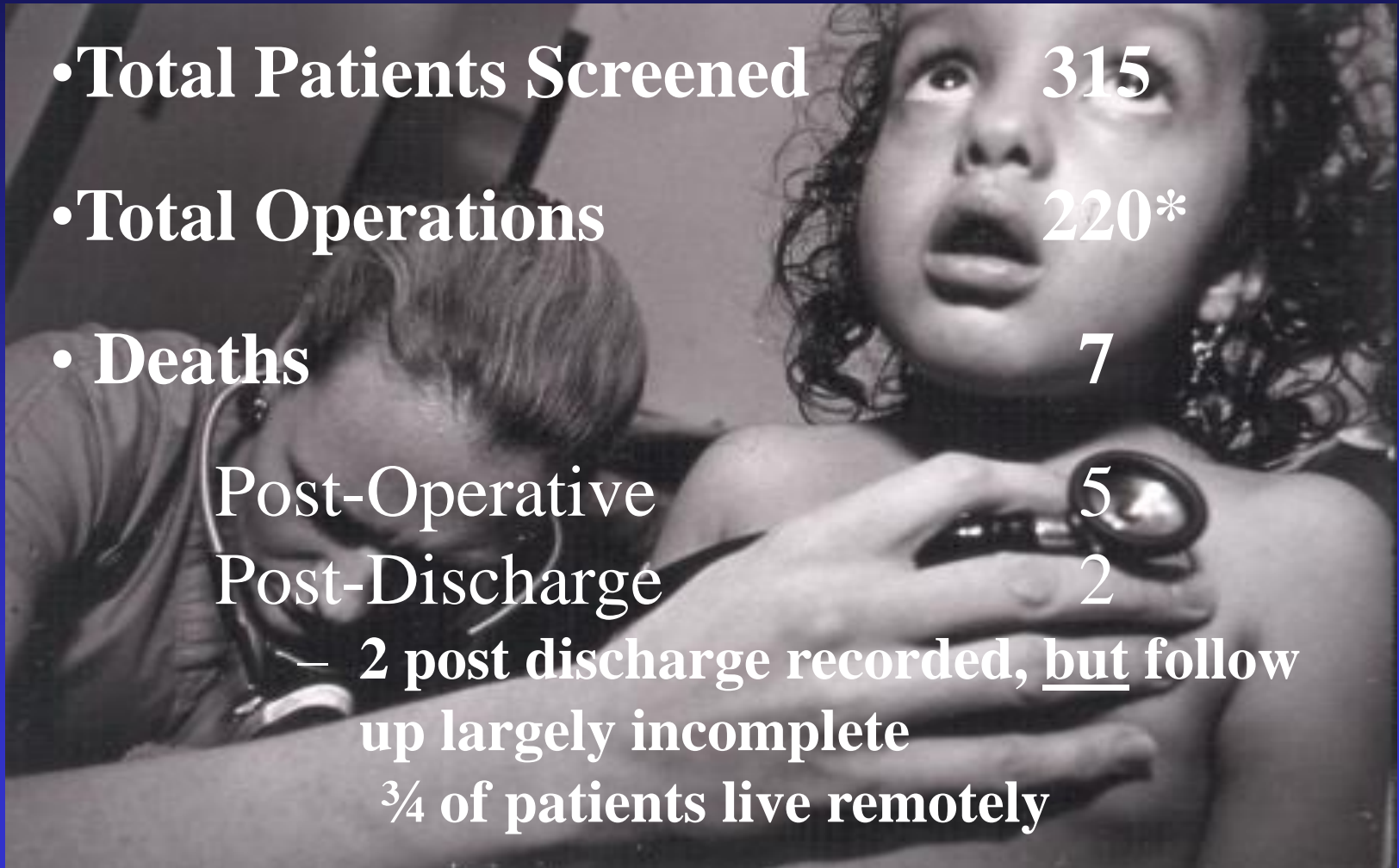
• Deaths 7

Post-Operative 5

Post-Discharge 2

– 2 post discharge recorded, but follow  
up largely incomplete

$\frac{3}{4}$  of patients live remotely





# HCI In-hospital Mortality Data

## Compiled for Guatemala (n=302)

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<u>Category:</u>	<u>In Hospital Deaths(/100):</u>		<u>Avg LOS (d):</u>	
	<u>HCI</u>	<u>Jenkins</u>	<u>HCI</u>	<u>Jenkins</u>
1	1.2	4.8	4.28	11.1
2	3.4	6.4	6.01	12.1
3	7.1	10.7	6.69	15.9
4	0	15.9	10.60	16.6

*Navedo-Rivera AT, WS Schechter, D Jordan, M Galantowicz and RE Michler  
In-hospital Mortality for Volunteer Pediatric Cardiac Surgery Missions in Guatemala  
ASA Meeting Abstracts, A-1291, October 2000*

# Heart Care International

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- **Lasting Legacy of HCI in Guatemala**
  - **Helped Dr. Aldo Castaneda**
    - Creation of UNICAR
  - **HCI was a financial contributor to UNICAR**
  - **Continued contact for two-way education/training**





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# Santo Domingo, Dominican Republic

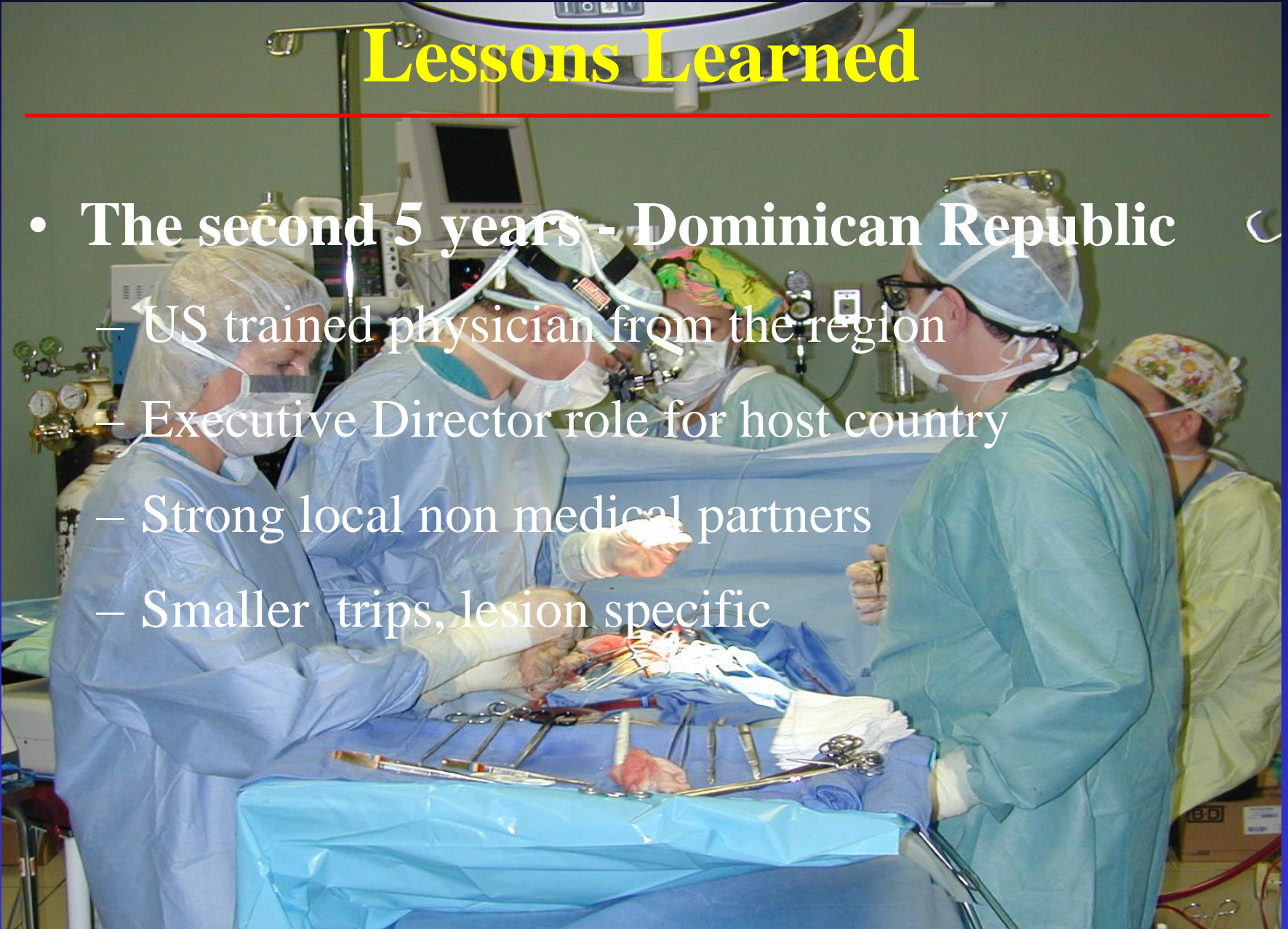
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- Dominican Republic (1999-2004)
- La Plaza de la Salud, CEDIMAT
- 267 surgical procedures on 245 patients
  - TOF > 25%, VSD, ASD, PDA, AV canal, Coarct
  - Dr. Freddy Madera: US Board Certified
  - Creation of Heart Care Dominica
  - Program performing independent surgery since 2008, and teaching other Caribbean centers

# Lessons Learned

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- **The second 5 years - Dominican Republic**
  - US trained physician from the region
  - Executive Director role for host country
  - Strong local non medical partners
  - Smaller trips, lesion specific



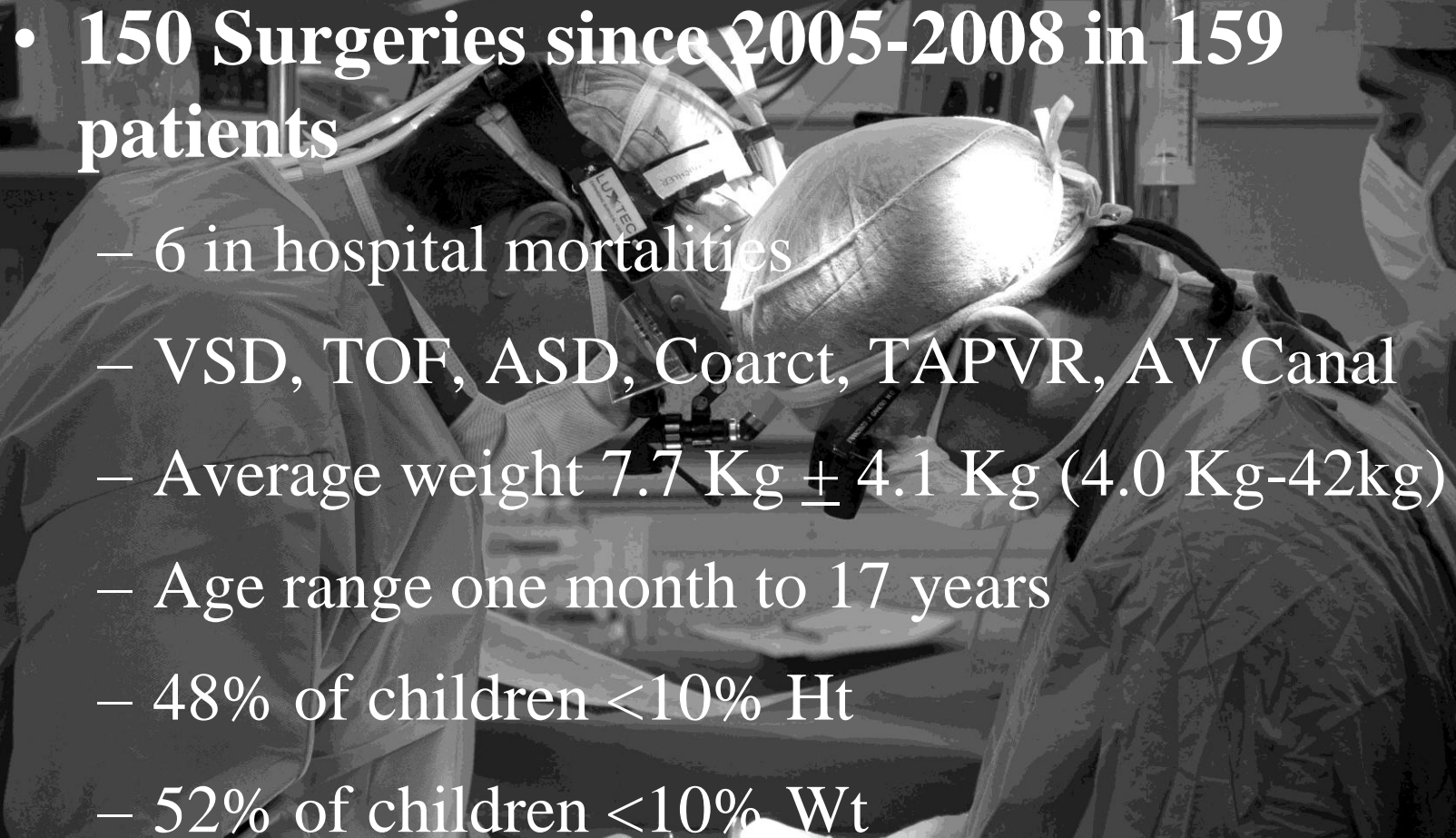






# San Salvador, El Salvador

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- 150 Surgeries since 2005-2008 in 159 patients
    - 6 in hospital mortalities
    - VSD, TOF, ASD, Coarct, TAPVR, AV Canal
    - Average weight  $7.7 \text{ Kg} \pm 4.1 \text{ Kg}$  (4.0 Kg-42kg)
    - Age range one month to 17 years
    - 48% of children  $<10\%$  Ht
    - 52% of children  $<10\%$  Wt

# El Salvador

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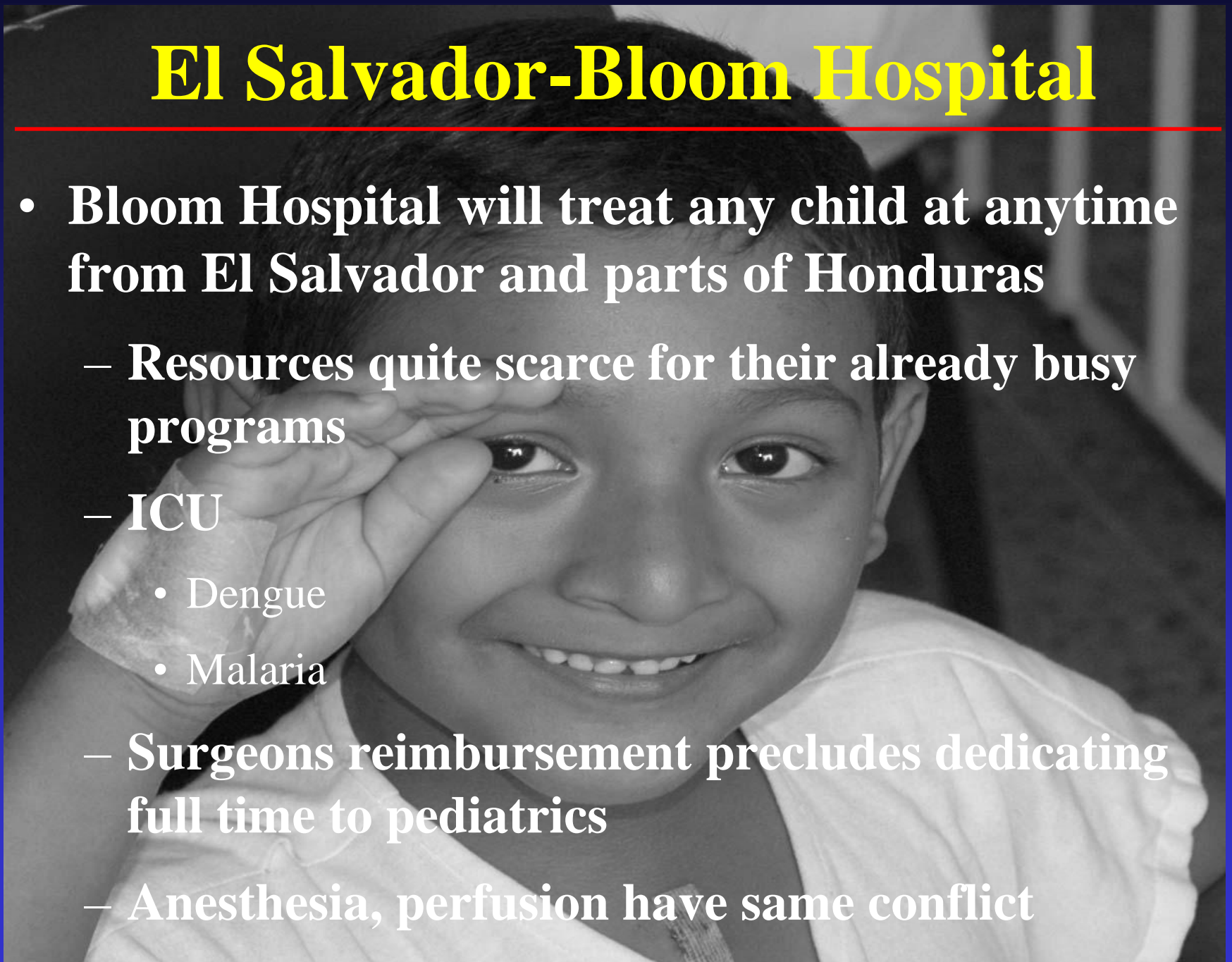
- Two trips: goals and timing
  - Smaller teaching trips
    - Lesion specific
    - Focus on ES staff
  - **Larger volume trips requested by ES physicians and Sana Mi Corazon**
    - One room for ES staff with local primary surgeon
    - One room for HCI staff with ES first assistance



# El Salvador-Bloom Hospital

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- **Bloom Hospital will treat any child at anytime from El Salvador and parts of Honduras**
  - **Resources quite scarce for their already busy programs**
  - **ICU**
    - Dengue
    - Malaria
  - **Surgeons reimbursement precludes dedicating full time to pediatrics**
  - **Anesthesia, perfusion have same conflict**



# El Salvador

- Benjamin Bloom Hospital since 2005
- Surgical team: Drs. Martinez, Martinez, Gamero
- Cardiology in house: Drs. Velado and Fernandez
- US and ES governmental support
  - President Jaimie Saca
  - Ambassadors Barclay and Glazer

EL SALVADOR 2006





# Heart Care International

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Sanamicorazón  
salvando corazones

# El Salvador

- HCI integral in hospital development and allocation of resources, “Consultants”
  - Executive Director
  - Identification and training of anesthesiologist in Mexico through HCI scholarship
  - Establishment of ICU nursing curriculum and training program for ICU nurses independent of missions







# Lima, Peru

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- Hospital del Nino
- 2 trips completed in 2011
- 27 surgeries
- 6 Cath procedures ASD closures/coarctations
- 3 surgeons, 1 anesthesiologist, 2 perfusionists
- Scholarships for surgeon and ICU nurse





# Heart Care International

## 17 Year Experience

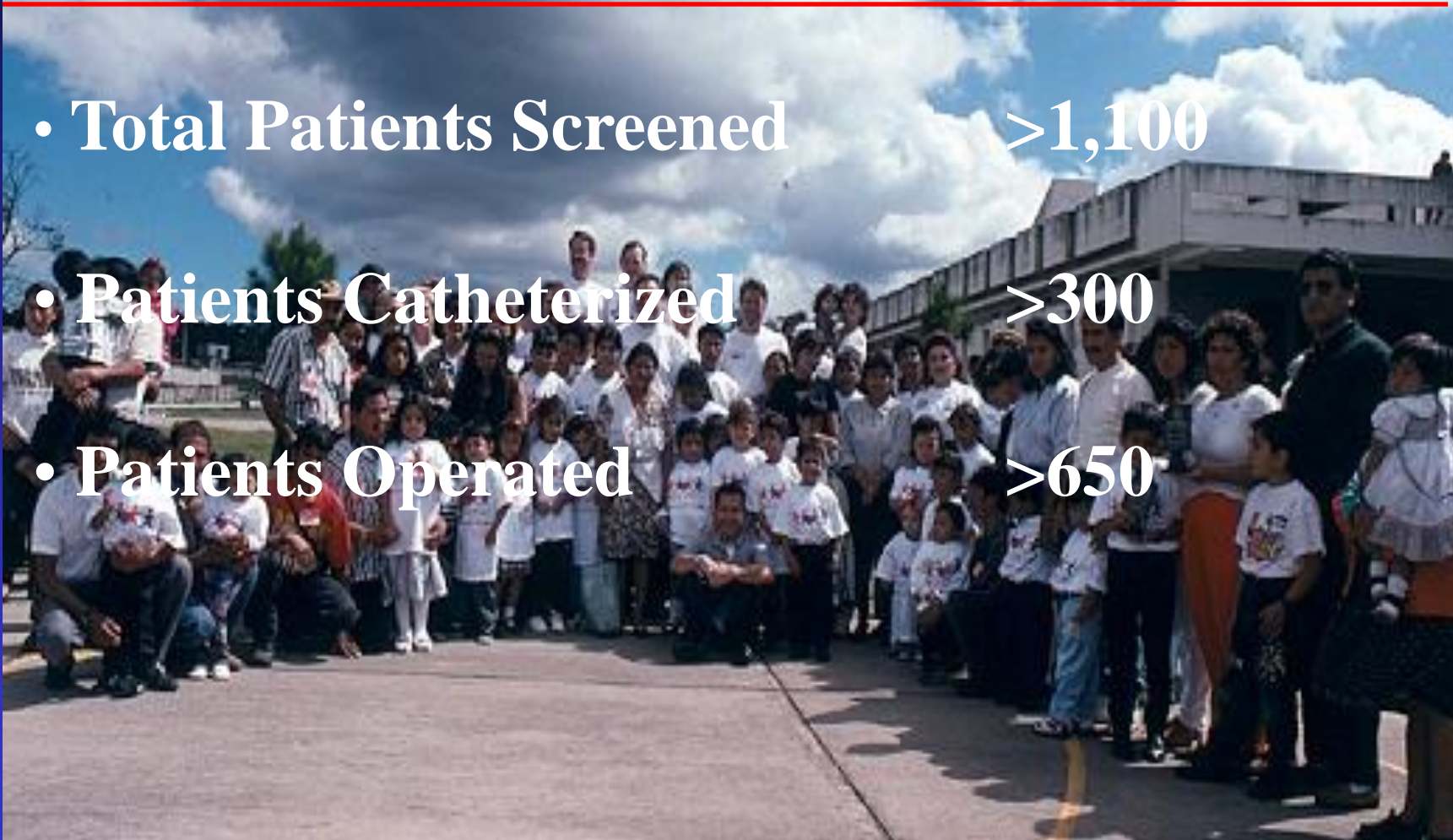
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<u>Country</u>	<u>Initial Year</u>	<u>Heart Operations</u>
Guatemala	1994	220
Dominican Republic	1999	287
El Salvador	2005	125
Peru	2011	27

# Heart Care International 17 Year Experience

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- Total Patients Screened >1,100
- Patients Catheterized >300
- Patients Operated >650





# Lessons Learned

Frustrated, surgeon Michler scratches his head as he confers with Leo Lopez and Mary Kichuk. Everything is going smoothly in the operating room (far right), but the recovery room the Americans have set up can't handle any more patients. Monitors aren't working, test results are delayed, the electricity keeps going off. When a child goes into cardiac arrest, nurse Tricia Telesca (center) calls for help as she pumps oxygen into the baby's lungs by hand. The child is in trouble. "This is not a field where you can mess up," says pediatric cardiologist Tony Rossi, conferring with Kichuk (bottom) about the speed up response time to problems. "Every time you err, it's life and death."

Crisis and tears in the intensive care unit

**A**s the baby is a sp... tubes and monitoring lines is dying in the ICU. Her heartbeat is irregular. "Do CPR," orders pediatric cardiologist Tony Rossi. The ventilator is not working. The suction is not working. No one knows what to do. A surgeon is on top as her chest. Silence. In spite of the efforts of 18 people, the baby dies. Nurses and doctors snap off their rubber gloves. The team, mostly from New York City's Columbia Presbyterian and Mt. Sinai hospitals, meets to rethink procedures. "People were angry, people were crying," Michler recalls. "They felt helpless." Says Rossi. "The worst feeling is telling a family their child has died after surgery. We are pediatricians. We just want to take care of kids."



First 5 years - Guatemala

High volume, longer missions have limitations

Communication between missions

Biomedical support

Electricity, oxygen supply

Without surgical programs may not be specifics of surgical care



# Lessons Learned

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- All trips focus primarily on teaching regardless of volume
- Local surgeons performing or assisting on all cases
- ASD, VSD, TOF, PDA, Coarct, SubAS
- Surgical missions limited to one week
- Medical personnel stay one week following surgery





# Sustainability: Heart Care International

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- **Site Selection**

- **Need**

- Poverty/poverty of access to health care

- **Local Support-shared vision with HCI**

- medical- specific physician “champion”
    - non-medical volunteers
    - competitive forces among local physicians/hospitals
    - importance of a contract with host country team

- **Long-term Commitment- minimum 5 years**

- **Hospital/Clergy/Government support**

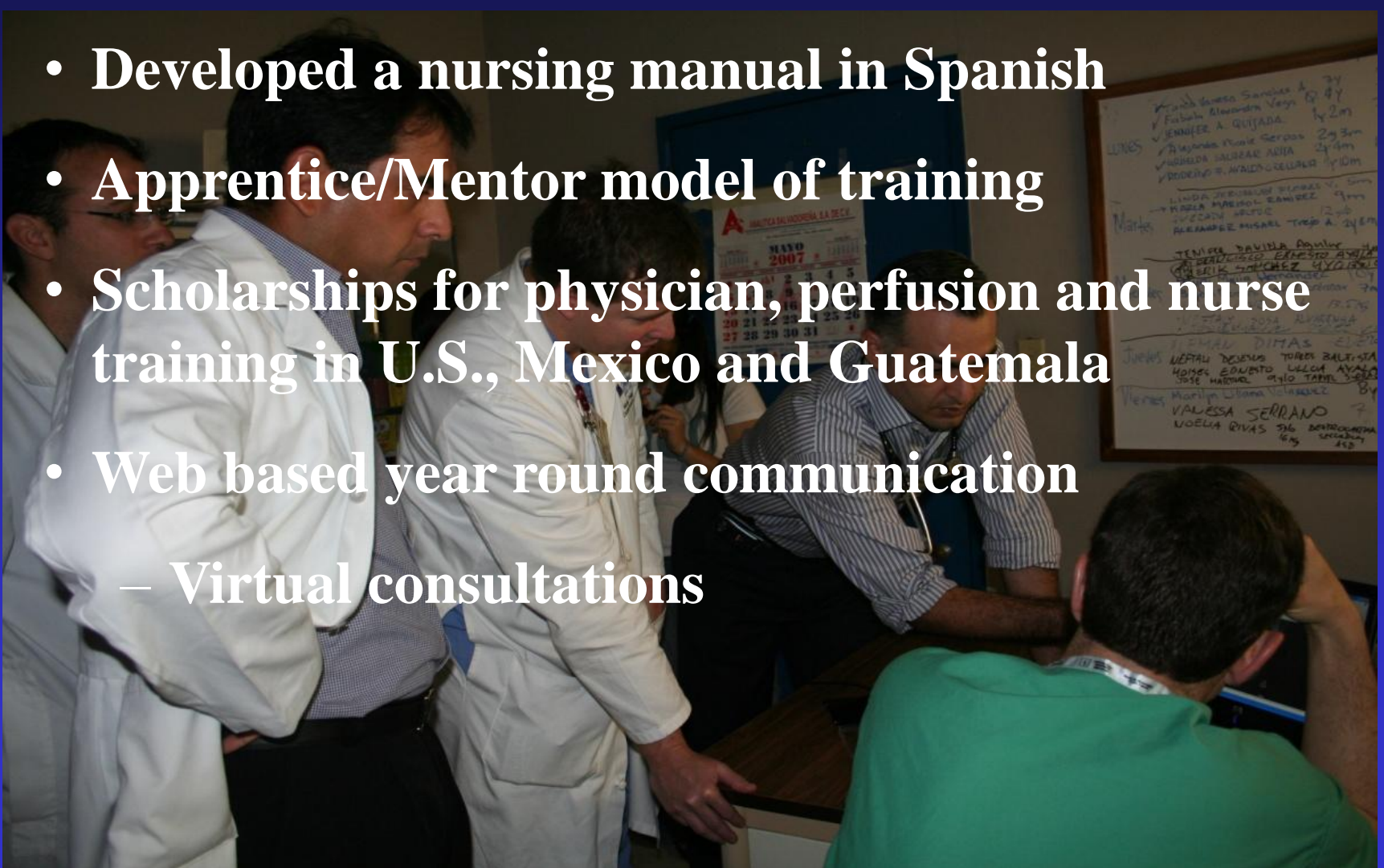
- **Site Visit**



# Sustainability:

## Heart Care International

- Developed a nursing manual in Spanish
- Apprentice/Mentor model of training
- Scholarships for physician, perfusion and nurse training in U.S., Mexico and Guatemala
- Web based year round communication
  - Virtual consultations





# Sustainability: Heart Care International

- Challenge of protected physician time
  - Salary offset?
- Public vs Private hospitals?
  - Economics
  - Access to indigent patients
- Private patients pay for indigent care?
- Brain drain of talent to developed countries





# Sustainability: Heart Care International

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- **Non-Medical Volunteers**
  - **Executive Director**
    - Works closely with Chairman MD and Board
    - Year round job
    - Establish Critical Pathway
      - coordinate volunteers
    - Oversight over equipment and supplies
    - Communication with team members

# Sustainability: Heart Care International

- Non-Medical Volunteer Infrastructure:
  - Airline Travel
  - Lodging and Meals
  - Transportation
    - Airport arrival and departure
    - Hospital-Hotel route
  - Personal safety and security
    - Establish rules and safeguards
    - Travel information package including relaxation
  - Interpreters, beepers, communication critical





# Heart Care International Philosophy

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Investing in congenital cardiac care is not mutually exclusive to caring for all children.

Cardiac surgery prepares a hospital to treat most if not all serious pediatric illness.





# Heart Care International 17 Year Experience

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# Heart Care International 17 Year Experience

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# Heart Care International 17 Year Experience

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# Heart Care International 17 Year Experience

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# Heart Care International

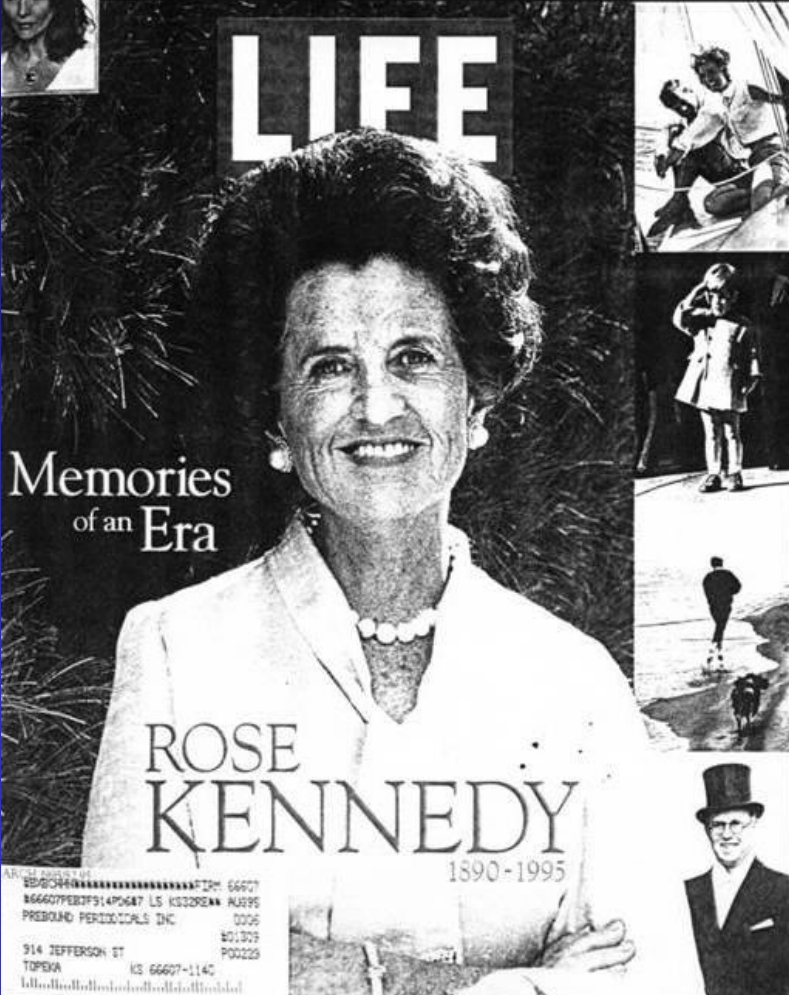
MICHELLE PFEIFFER WEARS THE HOPE DIAMOND

**LIFE**

Memories of an Era

ROSE KENNEDY  
1890-1995

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TOPEKA KS 66607-1140  
PO2229



The team leaves behind kids who can look forward to tomorrow.

**W**ith technicians tinkering around the clock and the staff working hard to adjust to local realities, the ICU gets up and running. By the end of the week, 25 children are making remarkable recoveries, and the American team has been presented with handmade jackets, carvings and one plush toy parrot. But the real payment is in the joyful faces of the patients and their parents. Asks an ICU nurse, "How do you say in Spanish, 'I am so happy for you?'"

Before they arrived, the Americans had heard horror stories about guerrilla attacks on tourists in Guatemala. Likewise, the Guatemalans had heard horror stories about Americans who kidnapped babies to steal their organs. But Guatemalan families associated with Healing the Children took members of the medical team into their homes and hearts. They took turns bringing them lunches—including vegetarian requests. And the Americans, who were even then planning a return trip, gave generously too, leaving \$500,000 worth of equipment and invaluable knowledge behind. "It's like the old Chinese saying," says Gaitan. "Give a man a fish, and you feed him for a day. Teach a man to fish, and you feed him for a lifetime."

Each member of the medical team had come to Guatemala looking for a way to give something back—and was tested in the process. "There were no egos here. We have worked together beautifully," says Rossi. "It satisfied those Peace Corps urges, but it went deeper." Kichuk adds. Michler concurs; he never could have predicted the degree of satisfaction he would get from a single week of giving. Says the man whose team saved 25 lives, "Frankly, I was just lucky to be asked."

"Seeing these children—it was very powerful for me," says Michler, visiting with Ruth (in white T-shirt with lettering) and others who were operated on a few days earlier.



Ruth's mother and sisters examine her bandage. A day after the operation, Ruth is walking. Within weeks, she is running around like a normal child.

Text by Claudia Glenn Dowling

