Role of PAHO/WHO on Clinical Engineering & Technology Management in Latin America and the Caribbean

Antonio Hernandez
PAHO Infrastructure and Resources

- 38 Member States
- Headquarters (Washington)
- 28 Country Offices
- 1 Border Office (USA/Mexico)
- 8 Scientific Centers
- WHO: HQ & 5 Regional Offices
- Network of Collaborating Centers – ECRI, FDA, MDB
- Technical Cooperation among Countries
- Strategic Alliances – ACCE, CENETEC
Office of the Assistant Director - PAHO

Assistant Director (AD)

Gender, Ethnicity & Health Unit (GE)

Family & Community Health Area (FCH)
Technology and Health Services Delivery Area (THS)
Disease Prevention & Control Area (DPC)
Sustainable Development & Environmental Health Area (SDE)

Health Services Organization Unit (OS)
Essential Medicines, Vaccines & Health Technologies Unit (EV)
Mental Health and Specialized Programs Unit (HM)

Health Services Engineering & Maintenance (MAN)
### Latin America & Caribbean

#### Basic Indicators

<table>
<thead>
<tr>
<th>Category</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Countries:</td>
<td>33</td>
</tr>
<tr>
<td>Territories:</td>
<td>10</td>
</tr>
<tr>
<td>Population:</td>
<td>550’767,000</td>
</tr>
<tr>
<td>Urban Population:</td>
<td>76,6%</td>
</tr>
<tr>
<td>Life expectancy at birth:</td>
<td>70,9 Years</td>
</tr>
<tr>
<td>Hospitals:</td>
<td>16,566</td>
</tr>
<tr>
<td>Beds</td>
<td>1‘140,000</td>
</tr>
</tbody>
</table>

- 39,3% Public Hospitals
- 5,2% Social Security Hospitals

**TOTAL:** 44,5% Hospitals in the Public Sector

**45,1%** Hospitals Beds in the Public Sector
Regional Status

- Technology Dependant Countries
- Lack of National Policy for Technology Management
- Few Medical Device Regulatory Programs
- Average 50% of Equipment Out of Service or Not in Use
- Obsolete Buildings. Deterioration 50%
- Shortage of Professional and Technical Staff
- Few Universities & Technical School with Programs on BE, CE,
- Lack of Physical Infrastructure Planning Programs
- Weak Maintenance Programs
- Weak After Sale Support Service
- Less than 1% of Operation Budget for Maintenance
- Lack of Equipment Inventories and Control Systems
- Continuous Acquisition of Technology
PAHO Technical Cooperation on Health Services
Physical Infrastructure & Technology

To Collaborate with the Member States in National Development and Institutional Capacity Building on Healthcare Technology and Engineering in Health Services
HEALTH SERVICES PHYSICAL AND TECHNOLOGICAL INFRASTRUCTURE

CLINICAL ENGINEERING
HOSPITAL ENGINEERING
MAINTENANCE

PLANT OPERATION
MAINTENANCE SERVICES
HEALTH CARE FACILITIES ENGINEERING PROGRAMS

- MAINTENANCE MANAGEMENT
- SAFETY AND BIO-SAFETY
- ENERGY MANAGEMENT
- VULNERABILITY
- ENVIRONMENTAL MANAGEMENT
HEALTH SERVICES PHYSICAL AND TECHNOLOGICAL INFRASTRUCTURE

ARCHITECTURE AND ENGINEERING

CLINICAL ENGINEERING

HOSPITAL ENGINEERING

MAINTENANCE

HEALTHCARE FACILITY DEVELOPMENT

PLANT OPERATION

MAINTENANCE SERVICES
HEALTH SERVICES PHYSICAL AND TECHNOLOGICAL INFRASTRUCTURE

- MEDICAL
- INDUSTRIAL
- ARCHITECTURE AND ENGINEERING
- CLINICAL ENGINEERING
- HOSPITAL ENGINEERING
- MAINTENANCE

- EQUIPMENT TECHNOLOGY MANAGEMENT
- HEALTHCARE FACILITY DEVELOPMENT
- PLANT OPERATION
- MAINTENANCE SERVICES
EQUIPMENT TECHNOLOGY MANAGEMENT

PLANNING

PROCUREMENT

MANAGEMENT

ASSESSMENT

DISPOSAL

REPLACEMENT
HEALTH SERVICES PHYSICAL AND TECHNOLOGICAL INFRASTRUCTURE

MEDICAL DEVICES REGULATION

EQUIPMENT TECHNOLOGY MANAGEMENT

HEALTHCARE FACILITY DEVELOPMENT

PLANT OPERATION

MAINTENANCE SERVICES
MEDICAL DEVICE REGULATION PROGRAM

Define "MEDICAL DEVICE"

Require Notification of Entry Into the Market

Conduct Post-Market Vigilance

Audit Manufacturing and Distributor Sites

Apply Pre-Market Assessment Controls

Harmonize Regulatory Requirements
HEALTH SERVICES PHYSICAL AND TECHNOLOGICAL INFRASTRUCTURE

- MEDICAL DEVICES REGULATION
- EQUIPMENT TECHNOLOGY MANAGEMENT
- HEALTHCARE FACILITY DEVELOPMENT
- PLANT OPERATION
- MAINTENANCE SERVICES

E-Health
Tele-Health
Telemedicine
Definitions

- Telemedicine:
The Practice of Medical Care Using Information Technologies, Communications and Medical Devices

- Tele-Health:
In Addition to Telemedicine it Includes the Use the Support to Non-Clinical Functions in Health

- e-Health:
Encompass Tele-Health, Telemedicine and e-Business and Trade Transactions in Health
HEALTH SERVICES PHYSICAL AND TECHNOLOGICAL INFRASTRUCTURE

- E-Health
- Tele-Health
- Telemedicine

- MEDICAL DEVICES REGULATION
- EQUIPMENT TECHNOLOGY MANAGEMENT
- HEALTHCARE FACILITY DEVELOPMENT
- PLANT OPERATION
- MAINTENANCE SERVICES

HEALTHCARE TECHNOLOGY ASSESSMENT
1991-2005

PAHO/WHO Strategic Alliance

American College of Clinical Engineering (ACCE) Partners:
- Emergency Care Research Institute (ECRI)
- International Certification Commission (ICC)
- Medical Devices Bureau - Health Canada (MDB)
- FDA/Center for Devices and Radiological Health (CDRH)
- Association for Advancement of Medical Instrumentation (AAMI)
- American Society for Healthcare Engineering (ASHE)
- Mexican Biomedical Engineering Society (SOMIB)
- National Center for Excellence on Technology (CENETEC)
- Institute of Electrical and Electronic Engineering (IEEE/EMBS)
- ORBIS

Objective

Clinical Engineering and Technology Management Workshops (ACEW)
Challenges & Opportunities

- National Strategic Alliances (Public-Private)
- Coordination with Universities and Professional Societies
- Institutional Capacity Building in Healthcare Facilities for Technology Management
- Links to Global Initiatives
  - Health Technology Assessment (iHTA)
  - Medical Devices Regulation (GHTF/PAHO)
  - Global Alliance for Patient Safety (WHO)
  - e-Health/Telemedicine (PAHO/WHO)
  - Medical devices Interpretability (IEEE/ACCE)
Listserv Groups

- HTA – Health Technology Assessment
- e-Health – e-Health & Telemedicine
- MED-DEVICES – Medical Devices Regulation
- INFRATECH – Health Services Physical Infrastructure & Technology
- INFRACARIB – Health Services Physical Infrastructure & Technology for the Caribbean Countries