



**Progress in the optimization of  
radiation protection in paediatric  
interventional radiology and  
cardiology in Latin America and the  
Caribbean (OPRIPALC project)**

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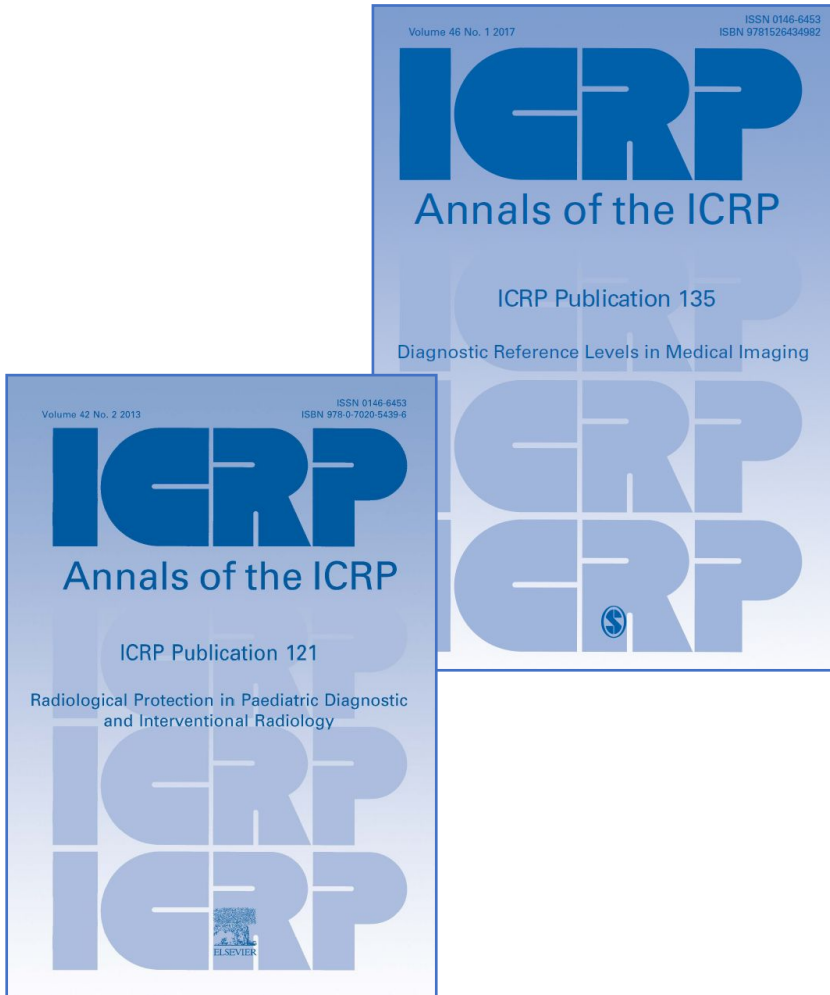
# Purpose – Introduction (1)

- The International Basic Safety Standards have requirements for the protection in medical exposures of patients including the establishment of diagnostic reference levels (DRLs).
- The World Health Organization (WHO), the Pan American Health Organization (PAHO) and the International Atomic Energy Agency (IAEA) initiated in 2019 a project for enhancing optimization in **paediatric interventional radiology** in Latin American and Caribbean countries through the use of DRLs (OPRIPALC project).

# Purpose – Introduction (2)

- When interventional radiology and interventional cardiology procedures are performed in children, radiation doses may be relatively high.
- For some complex cases, it is important to avoid high doses considering if:
  - The X-ray systems are under strict quality control programs;
  - The operational protocols are properly supervised, and
  - Staff is trained in radiation protection

# Purpose – Introduction (3)



- The ICRP has issued new recommendations on Diagnostic Reference Levels (DRLs) including advice for paediatric interventions.
- The new technology in X-ray systems and post-processing of the images should be implemented with the appropriate training (including the radiation protection aspects) and a regular audit of patient doses and image quality.

# Objectives of the OPRIPALC project

- The main objectives of the project refer to:
  - a) Promote radiation safety culture in paediatric interventional radiology,
  - b) Improve radiation safety and quality of care in the participating centres,
  - c) Define optimization strategies based on DRLs and an auditing patient doses and
  - d) Produce a regional consensus document offering guidance on optimization.

# Methods

- Only a few patient dose values have been collected from the initial group of 36 paediatric hospitals from 10 different countries that initially declared their interest in the programme.
- By the end of 2020 and during 2021, the efforts will be concentrated in establishing direct contacts with the practitioners performing paediatric fluoroscopy-guided interventions at the centres involved, to identify the difficulties and help in managing patient dose reports.
- Actions include engagement of manufacturers to help in finding technological solutions for dose management and launching of an OPRIPAL web site.

# The OPRIPAL website

- A website (in Spanish) for the OPRIPALC project has been launched: [opripalc.org](http://opripalc.org)

## OPRIPALC – ORG

¿Qué es **OPRIPALC**? Es un programa que busca la "OPTIMIZACIÓN DE LA PROTECCIÓN EN RADIOLOGÍA INTERVENCIONISTA PEDIÁTRICA EN AMERICA ...

### Objetivos

Objetivos. ¿Cuáles son los objetivos de OPRIPALC ...

### Centros

Centros. Listado de centros que mostraron interés en participar ...

### Actividades

Cuáles son las actividades propuestas en OPRIPALC ...

### Miembros

Este contenido está protegido por contraseña. Para verlo, por ...

### Quees

La radiología intervencionista y la cardiología intervencionista se ...

### Resultados

Cuáles son los resultados que se esperan de OPRIPALC ...



## ¿Qué es OPRIPALC?

Es un programa que busca la “OPTIMIZACIÓN DE LA PROTECCIÓN EN RADIOLOGÍA INTERVENCIONISTA PEDIÁTRICA EN AMERICA LATINA Y EL CARIBE”, la cual se enmarca como una iniciativa internacional para nuestra región, coordinada en forma conjunta por la [Organización Panamericana de la Salud \(OPS\)](#) y la [Organización Mundial de la Salud \(OMS\)](#), en cooperación con el [Organismo Internacional de Energía Atómica \(OIEA\)](#).



Escribenos por aquí!



**Preliminary version of the OPRIPALC website (in Spanish)**



# Current actions

- Identification of the existing basic quality controls for the interventional X-ray systems in the different involved hospitals.
- Identification of the existing calibration / validation for the dosimetric values reported for patient dosimetry.
- Revisit the criteria for the initial classification of interventional procedures for cardiac and non cardiac procedures performed in the different hospitals.
- Identify and suggest solutions, for the problems encountered in some hospitals to contribute with patient dose values to the central database to derive Diagnostic Reference Levels (DRLs).

# Methodology for the data collection

- Centralised data base at the Tarapaca University in Arica, Chile.
- Approaches to select the most frequent procedures and establish groups of similar interventional procedures for the initial proposal of DRLs (in addition to diagnostic and therapeutic procedures).
- Analysis of the existing experiences in the scientific literature and in the European Guidelines.
- Contacts with the radiology industry to facilitate the automatic collection and processing of dosimetric data in the different hospitals.
- Consider a pilot action to evaluate image quality and diagnostic information for the interventional procedures at the different involved hospitals.

**Initial selection of the  
most frequent  
procedures.  
To be updated**

# **OPRIPALC Project**

## **INITIAL SELECTED CARDIAC INTERVENTIONS**

- Patent ductus arteriosus closure
- Angioplasty of pulmonary arteries
- Cardiac diagnostic catheterisation

## **INITIAL SELECTED RADIOLOGY (NON CARDIAC) INTERVENTIONS**

- Cerebral angiography (diagnostic and therapeutic parts)
  - Arteriography (systemic)
  - Esophageal dilation

# Recent actions in the OPRIPALC data collection

- **10 Countries and 21 hospitals active in he answers during the last year:** Argentina, Brasil, Chile, Colombia, Costa Rica, Ecuador, Mexico, Peru, Uruguay and Venezuela.
- **Two questionnaires**
  1. To update data on X-ray systems, number of procedures, number of interventionists involved in paediatrics and support of medical physicists and/or technologists.
  2. Dosimetric data for at least 5 frequent paediatric interventional procedures.

# Identified problems during the data collection

- 1) Some of the hospitals declaring their initial interest in the project were not able to confirm their involvement.
- 2) Lack of details on the initial collection of dosimetric data.
- 3) Not defined in all the hospitals the most common interventional procedures.
- 4) Lack of information on the needs of training in radiation protection and in quality control of the X-ray systems and the existing local support for these issues.

# Conclusions and next steps

- Expand the patient dose data collection and identify the range of dose values at the different hospitals.
- Verify the existing basic quality controls of the X-ray systems involved in the programme and identify the needs in radiation protection training.
- Improve de collaboration with the radiology industry for the use of automatic patient dose registries,
- Expand the use and the content of the website.

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**Thank you**