



Paediatric interventional radiology and cardiology in Latin America and the Caribbean (OPRIPALC project). An international effort in optimization.

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OPRIPALC (Paediatric interventional radiology and cardiology in Latin America and the Caribbean)

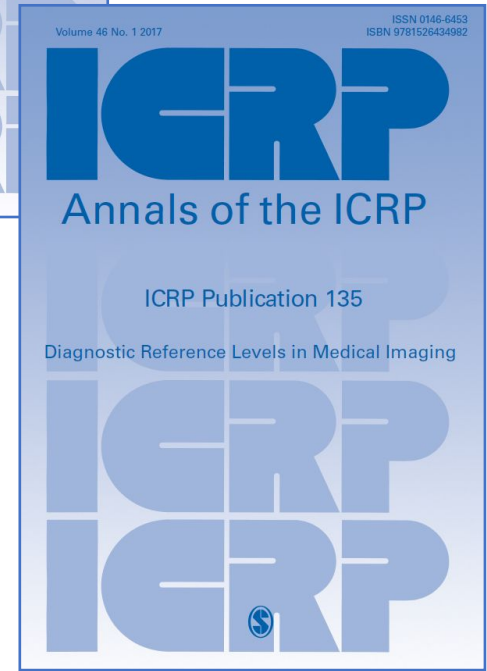
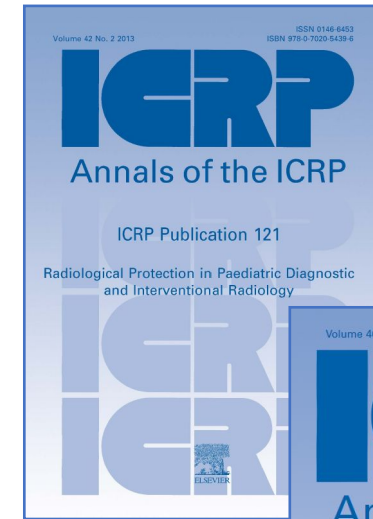
- When interventional radiology and interventional cardiology procedures are performed in children, **radiation doses may be relatively high.**
- For some complex cases, **it might result in tissue reactions** such as skin injuries if
 - The X-ray systems are not under strict quality control programs;
 - The operational protocols are not properly supervised, and
 - Operators are not trained in radiation protection.
- An additional problem with some of the procedures in paediatric procedures is the **re-intervention rate** due to the reappearance of the disease.

Important clinical benefits but higher cancer risk for children

- For a given radiation dose, **children are generally at more risk of cancer induction than adults**. According to UNSCEAR reports, the lifetime cancer risk for children might be a factor of **2 to 3 times higher** than the estimates for an average population.
- The International Basic Safety Standards (BSS) and the Bonn Call for Action pay special attention to paediatric patients and **the justification and optimization**.

Optimization in pediatrics and ICRP recommendations

- 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.



Radiation risk communication in paediatric imaging

- The **radiation risk communication** is a relevant aspect in paediatric imaging and especially in interventional procedures and it should be integrated in the training programs.

COMMUNICATING RADIATION RISKS IN PAEDIATRIC IMAGING

Information to support healthcare discussions about benefit and risk



2016

OPRIPALC objectives



- 1) To **promote radiation safety culture** in paediatric IR (including training actions).
- 2) To improve **radiation safety and quality of care** in the participant centres.
- 3) To define **optimization strategies based on a collection of patient doses** from a sample of representative hospitals in different Latin American and the Caribbean Countries for setting DRLs.
- 4) To produce a **regional consensus document** on these issues.

Initial steps of the OPRIPALC project

- Selection of **36 paediatric hospitals from 10 different countries**;
- Selection of **3 frequent procedures** for interventional radiology and 3 for interventional cardiology
- Preparation of **training material** on radiation protection and a common basic quality control protocol for the X-ray systems.

Summary of the initial OPRIPALC data

18 centres (53%) have patient dose values available

29 centres (85%) have interventional radiologists

27 centres (79%) have interventional cardiologists

13 centres (38%) have the support of a medical physicist

10 Countries and 36 hospitals:

Argentina
Brasil
Chile
Colombia
Costa Rica
Cuba
Ecuador
México
Perú
Uruguay

8 centres (23%) have the support of thecnologists



OPRIPALC Project

SELECTED CARDIAC INTERVENTIONS

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

SELECTED RADIOLOGY (NON CARDIAC) INTERVENTIONS

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

Recent actions in the OPRIPALC data collection and next steps

- **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.
- **Next steps**
 - Identify the main problems for the dosimetric data collection and suggest solutions.
 - Improve de collaboration with the radiology industry for the use of automatic patient dose registries.
 - To launch a website for OPRIPALC.

Thank You

