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

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

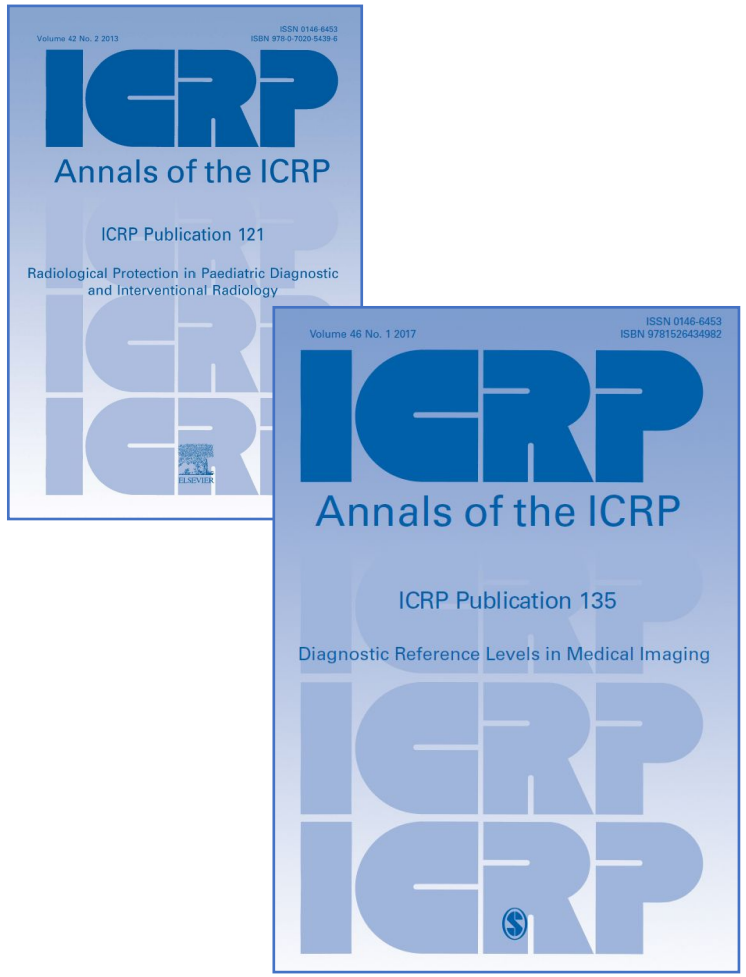
- When interventional radiology and interventional cardiology procedures are performed in children, **radiation doses may be relatively high.**
- For some complex cases, **it might result in tissue reactions** such as skin injuries if
  - The X-ray systems are not under strict quality control programs;
  - 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 pediatric patients and **the justification and optimization**.

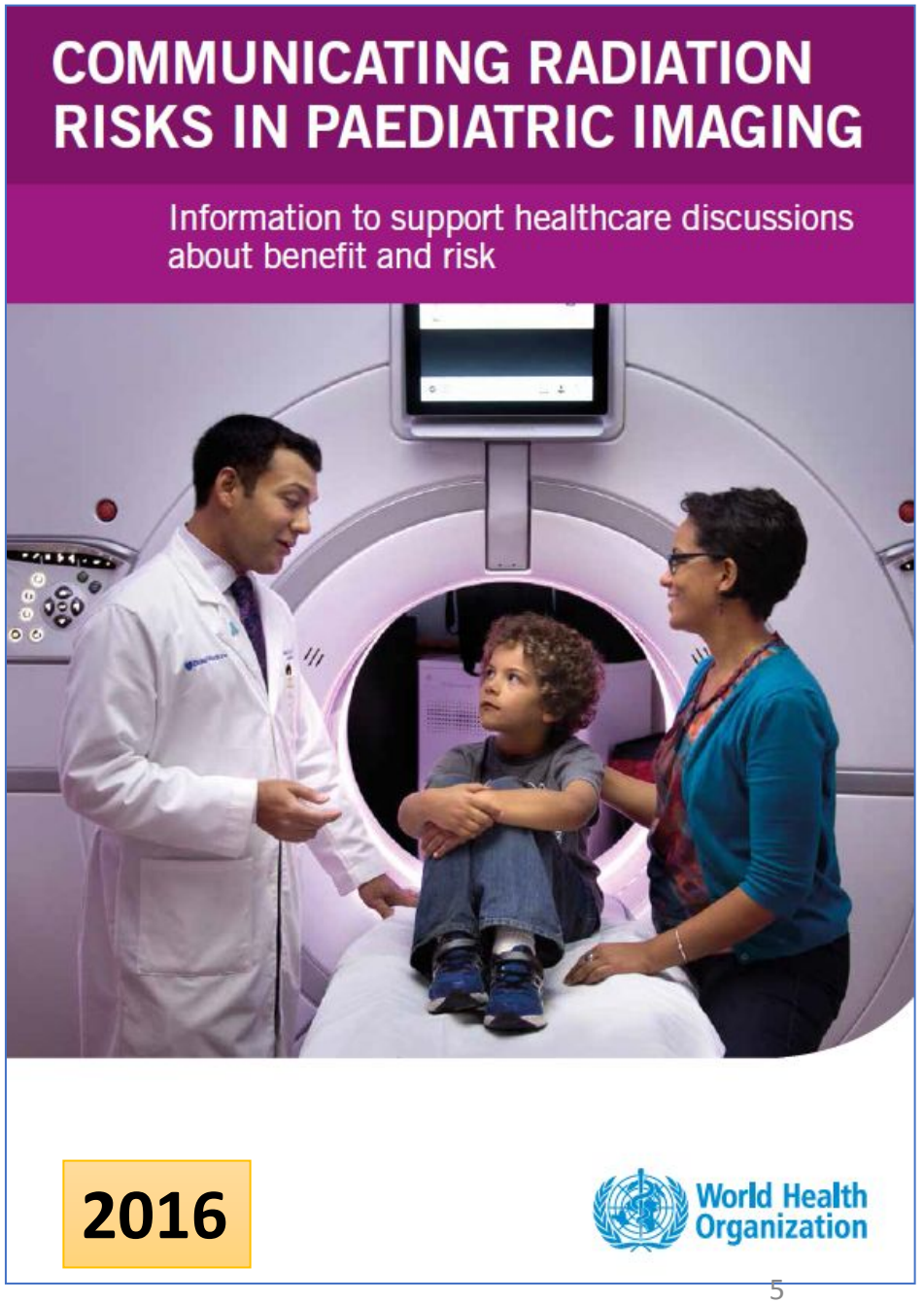
Optimization in paediatrics and ICRP recommendations

- 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.



OPRIPALC objectives

- 1) To **promote radiation safety culture** in pediatric 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 pediatric 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
			8 centres (23%) have the support of thecnologists

10 Countries and 36 hospitals:

Argentina
Brasil
Chile
Colombia
Costa Rica
Cuba
Ecuador
México
Perú
Uruguay


CUBA
4 Centros OPRIPALC
COSTA RICA
1 Centro OPRIPALC
MEXICO
8 Centros OPRIPALC
ECUADOR
2 Centros OPRIPALC
COLOMBIA
2 Centros OPRIPALC
BRASIL
11 Centros OPRIPALC
PERÚ
1 Centro OPRIPALC
URUGUAY
1 Centro OPRIPALC
CHILE
3 Centros OPRIPALC
ARGENTINA
2 Centros OPRIPALC

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

Next steps for OPRIPALC project

- The project expects to **enhance optimization of protection** in pediatric interventional procedures, collecting patient dose data and **identifying the main problems and proposing solutions.**
- The progress of the OPRIPALC is focused on identifying the **difficulties for the dosimetric collection of data and improving the collaboration of the manufacturers** to help with this issue.

Thank You


OPRIPALC
OPTIMIZACION DE LA PROTECCION EN RADIOLOGIA
INTERVENCIONISTA PEDIATRICA EN AMERICA LATINA Y EL CARIBE