# COMMUNICATING RADIATION RISKS IN PAEDIATRIC IMAGING

Information to support healthcare discussions about benefit and risk

World Health Organization

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Cover photo: Garrett Allison and his mom Gemini Janas speak with Dr. Rajan Gupta at Duke University Hospital (Durham, US) about the risk of radiation during diagnostic testing, such as a CT scan. © Shawn Rocco/Duke Medicine (with permission)

Photo page 2: Billington Jesse Semwogerere and his mom Victoria Nandagire have a conversation with Dr. Deborah Babirye at Ecurei-Mengo Hospital (Kampala, Uganda) about the risk of radiation during diagnostic testing, such as a CT scan. Source: Miss Elizabeth Nabunya Kawooya (with permission).

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# Foreword

Advancing imaging technology has opened new horizons for clinical diagnostics and has greatly improved patient care. As a result, the use of medical imaging has increased rapidly worldwide during the past several decades and the spectrum of its applications in paediatric health care has expanded. Paediatric computed tomography (CT) can provide fast and accurate information to help diagnosis; it saves lives and in many cases prevents the need for more invasive procedures. However, inappropriate use may result in unnecessary and preventable radiation risks, particularly in children. A balanced approach is needed that recognizes the multiple health benefits that can be obtained, while assuring that risks are minimized.

Patients and families should be part of risk–benefit discussions about paediatric imaging so they can best understand the information and use it for making informed choices. If they are not properly informed about risks and benefits of an imaging procedure, they may make choices that are not beneficial and may be even harmful (e.g. to refuse a CT that is needed or to demand a CT that is not justified). Radiation risk communication and risk–benefit dialogue is also necessary between health-care providers who request or perform radiological medical procedures in children. Effective communication between referrers and imaging team members may prevent inappropriate referral. By enabling informed decision-making, effective radiation risk communication contributes to ensure the greatest possible benefit of paediatric imaging, at the lowest possible risk.

In response to this need, the World Health Organization (WHO) convened a global collaboration to implement a project on radiation risk communication to support risk–benefit dialogue in paediatric imaging. This document has been developed by a group of recognized experts and extensive consultations with relevant stakeholders, including health-care providers, patient advocates, health authorities, radiation protection regulators, researchers and communication experts. Subsequent revisions of the document were made based on feedback collected through a number of workshops held in different regions of the world.

This document is intended to serve as a communication tool about known or potential radiation risks associated with paediatric imaging procedures, to support the risk–benefit dialogue during the process of paediatric health-care delivery. It provides information and resources to support communication strategies including examples of key messages to use in different scenarios. This tool is primarily intended for health-care providers who refer children to perform imaging procedures involving ionizing radiation exposure. In addition to this target audience, this document may be a useful tool for other relevant stakeholders.

WHO looks forward to continuing and expanding its collaboration with relevant stakeholders at global, regional and national levels to improve radiation safety and quality in paediatric health care.

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# Preface

Radiation risk communication is a key component of a radiation protection programme in health care. The level of awareness of health professionals about radiation doses and associated risks in medical imaging can be low. Referring medical practitioners need sufficient background, education and resources to communicate clearly and effectively about the benefits and risks of paediatric imaging procedures. In response to this need, the World Health Organization (WHO) started a project on radiation risk communication in paediatric imaging.

WHO convened an International Workshop on Radiation Risk Communication in Paediatric Imaging in September 2010. This meeting was held at WHO headquarters in Geneva, Switzerland, and it gathered 35 participants from 23 professional societies, international and regional organizations and United Nations (UN) agencies.[1] It included representatives of key stakeholders in the field of paediatric imaging such as radiologists, radiographers/radiological technologists, medical physicists, referring physicians, nurses, patients/parents, regulators, researchers and communication experts. The group mapped out existing guidance and tools to communicate radiation risks in diagnostic imaging, identified gaps and agreed on the need to support risk–benefit dialogue in paediatric imaging. It was proposed to develop an educational tool for health-care providers with guidance on how to effectively communicate radiation risks related to radiological medical procedures in children[2] to different target audiences. It was also proposed to make available more concise information for patients and families.

To this end, an expert group was established and a first draft document was produced. This was presented at a workshop on radiation risk communication in paediatric imaging jointly organized by WHO and the World Organization of National Colleges, Academies and Academic Associations of General Practitioners/Family Physicians (WONCA) during the 17th WONCA Conference of Family Medicine held in Warsaw, Poland, in September 2011. WHO convened a 2nd International Workshop on Radiation Risk Communication in Paediatric Imaging in December 2012 in Bonn, Germany. The meeting gathered 56 participants including individual experts from 19 countries and representatives from 12 international organiza-

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