EDUCATION AND TRAINING IN RADIATION PROTECTION: BRIDGING THE GAP TO KEEP ICRP RECOMMENDATIONS FIT FOR PURPOSE

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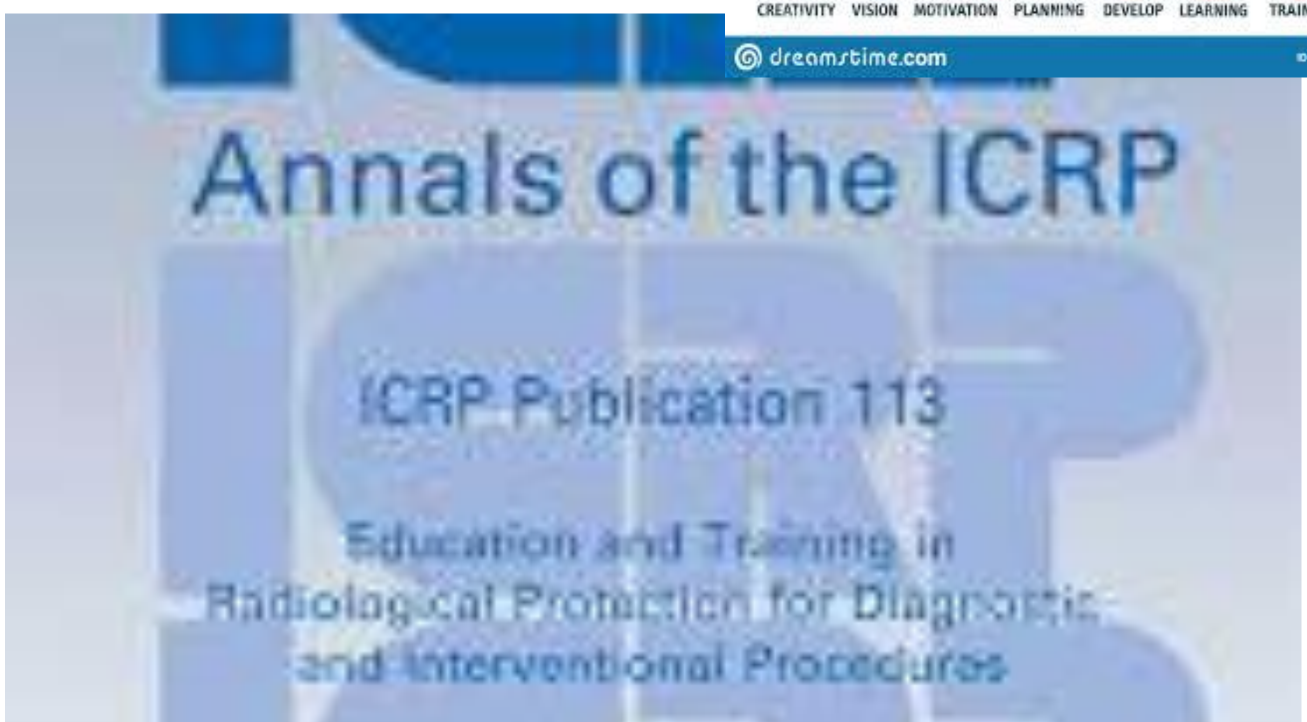
INTRODUCTION

1. **Introduction**
2. **Vision and Plan**
3. **Strategic direction-Research and Education, Training, Leadership and Administration**
4. **SWOT**
5. **Recommendations**

re Values

- ❑ INTEGRATED AND DOGGED APPROACH
- ❑ HARMONIZATION OF THE CONTENTS OF COURSES
- ❑ TRAINING THE TRAINERS
- ❑ PRIORITIZING
- ❑ DISSEMINATION OF EXPERIENCE AND KNOWLEDGE
- ❑ FOCUSING ON DEVELOPING COUNTRIES FOR TRAINING IN RP AREAS.
- ❑ ESTABLISHING A SYSTEM FOR CREDENTIALING RP TRAINING PROGRAM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Education and Training in Radiological Protection for Diagnostic and Interventional Procedures

Strategic plan cycle

Strategies

- **Continuous improvement:** commitment to the highest standards of professionalism and quality in RP Practices.

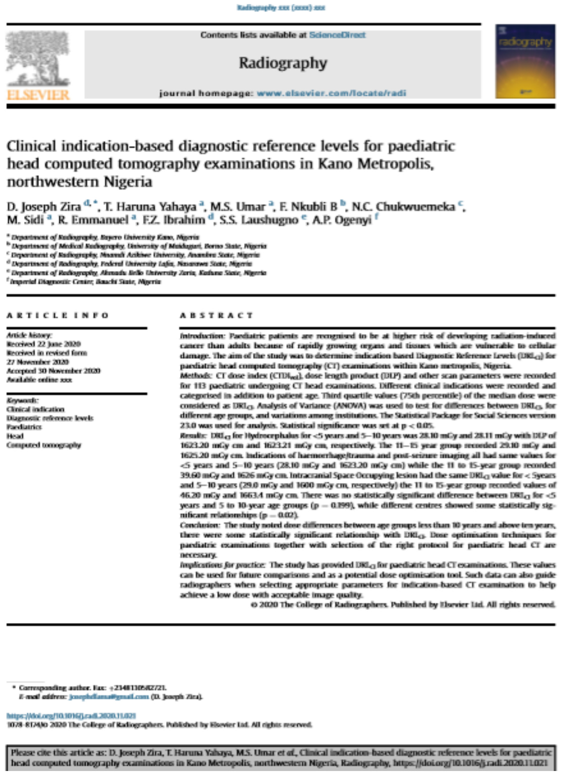
- **Innovation:** drive innovations in teaching and learning. Contribute to breakthroughs in the science and practice of RP.

- **Student engagement and success:** Establishing students and young RP club in institutions and conferences

- **Develop competence:** Curriculum and programs that enriches learning and accomplish the vision and mission of IAEA and ICRP.

- **Community Development and collaboration:** Awareness and outreach programs in RP

DEVELOP A FRAMEWORK AND ROAD MAP FOR ICRP RECOMMENDATIONS WITH ACTION PLAN



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Clinical indication-based diagnostic reference levels for paediatric head computed tomography examinations in Kano Metropolis, northwestern Nigeria

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ABSTRACT

Introduction: Paediatric patients are recognised to be at higher risk of developing radiation-induced cancer than adults because of rapidly growing organs and tissues which are vulnerable to cellular damage. The aim of the study was to determine indication based Diagnostic Reference Levels (DRL_{CI}) for paediatric head computed tomography (CT) examinations within Kano metropolis, Nigeria.

Methods: CT dose index ($CTDI_{vol}$), dose length product (DLP) and other scan parameters were recorded for 113 paediatric undergoing CT head examinations. Different clinical indications were recorded and categorised in addition to patient age. Third quartile values (75th percentile) of the median dose were considered as DRL_{CI}. Analysis of Variance (ANOVA) was used to test for differences between DRL_{CI}, for different age groups, and variations among institutions. The Statistical Package for Social Sciences version 23.0 was used for analysis. Statistical significance was set at $p < 0.05$.

Results: DRL_{CI} for Hydrocephalus for <5 years and 5–10 years was 28.10 mGy and 28.11 mGy with DLP of 1623.20 mGy cm and 1623.21 mGy cm, respectively. The 11–15 year group recorded 29.10 mGy and 1625.20 mGy cm. Indications of haemorrhage/trauma and post-seizure imaging all had same values for <5 years and 5–10 years (28.10 mGy and 1623.20 mGy cm) while the 11 to 15-year group recorded 39.60 mGy and 1626 mGy cm. Intracranial Space Occupying lesion had the same DRL_{CI} value for < 5years and 5–10 years (29.0 mGy and 1600 mGy cm, respectively) the 11 to 15-year group recorded values of 46.20 mGy and 1663.4 mGy cm. There was no statistically significant difference between DRL_{CI} for <5 years and 5 to 10-year age groups ($p = 0.199$), while different centres showed some statistically significant relationships ($p = 0.02$).

Conclusion: The study noted dose differences between age groups less than 10 years and above ten years, there were some statistically significant relationship with DRL_{CI}. Dose optimisation techniques for paediatric examinations together with selection of the right protocol for paediatric head CT are necessary.

Implications for practice: The study has provided DRL_{CI} for paediatric head CT examinations. These values can be used for future comparisons and as a potential dose optimisation tool. Such data can also guide radiographers when selecting appropriate parameters for indication-based CT examination to help achieve a low dose with acceptable image quality.

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- **Research and Innovation**

Research Plan and agenda,New frontiers in Research,grants, visibility, publishing in high impact journals

- **Teaching and Learning**

High academic standard, teaching quality,group and team, assessment alearningnd evaluation, effective communication, feedback, respect for diverse talents

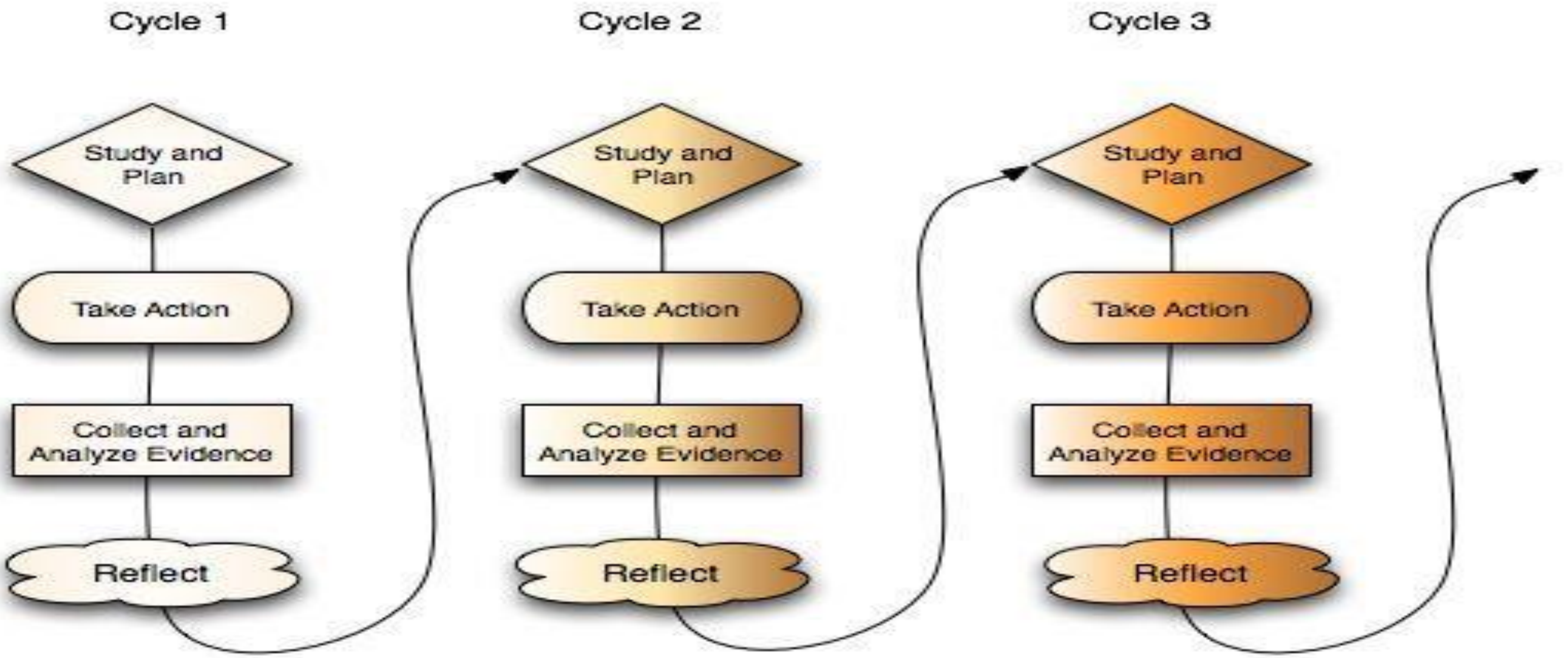
Promote existing collaborations, Expand research scholarship and creative research, mindset growing a global presence,

Engaging in comprehensive health care developmental service.

- **Collaboration and Global Network**

- **Community Development**

Progressive Problem Solving with Realistic Action Plan



Progressive Problem Solving with Action Research

Training an imperative Necessity

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Narrative Review

Bonn call for action and the unfinished task of radiation protection of children and adolescents in low and middle-income countries: A focus on Sub-Saharan Africa

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ABSTRACT

Objectives: The Bonn call for action, with the theme: "Setting the scene for the next decade," was declared over nine years ago to strengthen radiation protection in medicine. This study reviews key actions and activities related to radiation protection of children and adolescents consistent with the Bonn call for action in sub-Saharan Africa to highlight progress and identify existing gaps.
Key findings: A lot has happened since the declaration of the Bonn call-for-action such as a follow-up conference in 2017 on achieving change in the practice of radiation protection. However, there exists a huge gap that needs to be filled in the radiation protection of children and adolescents in low and middle-income countries particularly sub-Saharan Africa, where limited resources in health compete with radiation protection demands. Some of the gaps that remain are the apparent lack of implementation of the use of referral guidelines and establishment of national and regional diagnostic reference levels for paediatric imaging among others.
Conclusion: Several strides have been achieved on a global scale for the Bonn call for action, ranging from the justification of medical exposures to the current drive for radiation safety culture in medical imaging. However, several unmet needs for radiation protection for children and adolescents remain such as implementation of referral guidelines for justification and paediatric diagnostic reference levels.
Implications for practice: Step up actions and close collaboration is required to strengthen the practice of paediatric radiation protection in low and middle-income countries because children account for a greater proportion of the population and are vulnerable to the negative effects of radiation like possible cancer induction.

Introduction

There are currently an estimated 1.8 billion children and adolescents globally with more than fifty per cent of the population residing in low and middle-income countries (LMICs), particularly sub-Saharan Africa, according to a recent report by the Lancet commission on a future of the world's children.[1] The report further highlighted the fact that no country in the world has been able to meet the needs of children and that children and adolescents have not received enough representation in the global goals.[1] Medical imaging saves lives, reduces hospital stays and prevents unnecessary surgery among other benefits.[2,3] The application of ionizing radiation and radioactive substances in diagnostic, interventional and therapeutic procedures in medicine is beneficial to hundreds of millions of children and young people around the world who constitute an estimated 10% of all population exposure from medical sources annually.[4] However, the use of radiation in medicine involves a careful balance between the benefits of enhancing human health and welfare and the risk related to radiation exposure.[5,6]

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CONCLUSION

A lot of effort in Research, Innovation, training, teaching method, communication and feedback is a mandatory task for the ICRP Recommendations to keep it fit for purpose.

THINK BIG, AIM HIGHER, SET SUSTAINABLE, MEASURABLE, ATTAINABLE, REALISTIC AND TANGIBLE (SMART) GOALS IN LINE WITH THE VISION OF ICRP AND IAEA.

THANK YOU