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Symposium 4.2
Teaching Radiation Protection in Schools:
A Regional Experience

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Learning Objectives

- To be informed of the “X-rays: The Inside Story” project
- To consider an opportunity of collaboration in a global project to teach radiation protection to school students
- To consider the elements affecting its successful implementation
Limited Resources

- Sun safety & effects of UV rays are taught in schools\(^1\)
- AM built a portable battery-powered X-ray machine\(^2\)
- Most students: low awareness of medical radiation issues
- Med students & practitioners poorly informed about RP\(^3,4,5\)
- On-line resources for public & professionals
- Limited resources for school students

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\(^2\) Popular Science April 2012
Quality Elements

- Safe
- Capable
- Timely & accurate
- Efficient
- Effective
- Sustainable
- Accessible
- Integrated
- Responsive
- Appropriate

Patient-centered care

National Health Performance Framework Report. 2001
Improvement Actions

- Radiation protection measures
  - Procedure justification\(^1\)
  - Optimization of image quality, imaging data & RP\(^1\)
  - Error minimization

- Implementation Strategies\(^2\)
  - Promote awareness
  - Conduct research
  - Provide education & training
  - Strengthen infrastructure
  - Apply policy
  - Evaluate impact
  - On-going improvement

Education & Training

- Medical students, referrers & providers
  - Improve knowledge & competency
  - Strengthen curricula & programs
  - Revise & improve content, format & delivery appropriate for end-users

- School students
  - More vulnerable to the effects of radiation
  - Improve awareness, potential extended coverage
  - Empower consumers to improve use & enhance radiation safety
  - Promote interest in physical sciences & career choice
A Regional Experience

- Roentgen Anniversary Celebration Efforts (RACE) Program in 1995
  - Royal Australian and New Zealand College of Radiologists (RANZCR) to celebrate the 100 years discovery of X-ray
- “X-rays: the Inside Story”
  - Objective: to promote awareness on the medical use of radiation, RS & RP by the development & distribution
  - Educational resources tailored for primary & secondary schools
- Program Partners
  - Development & implementation: Australian Science Teachers Association
  - Sponsor: Toshiba Australia
Development

- Written by teachers, tailored for students & suitable for schools
- Radiology team provided support & advice
Teaching Tools

[Images of teaching materials and diagrams]
## Activity Card Contents

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Implementation

- Innovative approach
  - Donated by a RANZCR member to a school of his / her choice in **Australia & New Zealand**
  - ASTA informed members of project & the use of teaching tools
- Evaluation
  - Unofficial feedback: good acceptance & use.
  - No formal evaluation, i.e. degree of uptake, possible gaps & improvement opportunities unknown
- Experience useful to future projects
Timing & Opportunity

- Increase utilization: 3.6 billion XR procedures p.a.\(^1\)
- Public interest & concern about inappropriate use & unnecessary exposure
- Education & training improve awareness & promote appropriate use
- Teaching in schools is innovative & supports this strategy
- Leverage on past experience & develop a global project towards wider dissemination

\(^1\) UN Records of the General Assembly 2008
**Possible Steps**

- Formation of a core group to lead, initiate & advocate vision to collaborators
- Adoption of an inclusive & multi-sectorial approach to engage stakeholders
  - Organizations, agencies & authorities in education, science, medicine & RP
  - Different experience & unique roles
- Collaboration provides strength & synergy, maximizes resources, minimizes duplication & spearheads this project
- Project scope: development, implementation, evaluation & update
  - Long-term & sustainable
- Bridge the gap between evidence & knowledge
Project Plan

❖ Development: jointly by teachers & practitioners

❖ Contents, format & delivery to suit users & local setting, e.g.
  ❖ Classroom, Internet, multimedia, social media

❖ Trial and implementation requires support & collaboration from education authorities, school management, teachers & students.
  ❖ Advocacy by organizations & agencies

❖ End-users evaluation & on-going content improvement

❖ Challenges: human, financial, resources & support

❖ Solutions: collaborate, share knowledge & resources; patience & perseverance
Conclusion

Living with radiation – Engaging with society

Teaching of RP in schools improves awareness, enhances radiation safety, & promotes interest in physical sciences & career choice

“X-rays: The Inside Story” a RANZCR + ASTA + Toshiba, Australia project development & dissemination of a set of teaching tools for schools

Opportunity for a global project to strengthen awareness

Leadership + collaboration + participation = successful outcome
Teaching of Radiation Protection in Schools

A Regional Experience

Thank you very much for your attention