



# **Radiation Protection Culture in Medicine**

*Regional Workshop  
11 April 2015  
Buenos Aires, Argentina*

**MEETING AGENDA**

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Guiding principles on Radiation Protection Culture drawn up by  
RP professionals for the benefit of RP professionals and  
patients

A common initiative IRPA IOMP WHO on medicine

**Dr B Le Guen**  
IRPA Executive Officer



*Workshop on RP culture in medicine*  
*Buenos Aires, Argentina, 11st April 2015*



# Introduction

- ❑ At the IRPA12 Congress in Buenos Aires in October 2008, the French Society for Radiation Protection (SFRP) proposed to launch an IRPA initiative for enhancing Radiation Protection (RP) culture among the RP professionals worldwide.
- ❑ April 2015, IRPA launch again a new initiative in Buenos Aires ...but not alone



- ❑ More than 70 persons expressed their interest to participate for this new on going process



Project of Guiding principles on Safety Culture in medicine  
drawn up by RP professionals and stakeholders for the benefit  
of RP professionals and patients  
A common initiative IRPA IOMP WHO

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# FIRST IRPA DOC ON RP Culture: Goal ?



- **From nuclear industry to the medical sector, this first IRPA Guiding Principle on RP Culture was a common document about culture from the perspective of professionals, geared towards professionals**

- **The purpose was to capture the opinion and standpoint of RP professionals on what constitutes a strong RP culture.**

- This guidance has been developed in an inclusive and consultative approach



B. Le Guen - IRPA IOMP WHO workshop RP culture in medicine





## Role of IRPA

# The international voice of RP professionals

### ***Value and strength of IRPA:***

***Enormous resources of practical knowledge and experience in radiation protection and neighboring specialist fields***

- 50 Associate Societies representing 62 countries ;
- Almost 18,000 individual members

*IRPA provides a medium for communication and advancement of radiation protection throughout the world -*

*and has recognised the importance of establishing a sound **radiation protection culture***



# What is meant by Culture?



- ❑ The ideas, beliefs and customs that are shared and accepted by people in a society.
- ❑ That complex whole, which includes knowledge, belief, art, morals, law, customs, values, symbols, rituals and any other capabilities and habits, acquired by people as members of society that determine appropriate attitudes and behavior

# Culture comes from three sources



- (1) Beliefs, values, and assumptions of the **founders** of an organization,
- (2) Learning **experiences** of group members as the organization evolves (Groups of people who have shared significant problems, solved them, observed the effects of their solutions, and who have taken in new members)
- (3) Beliefs, values, and assumptions brought in by **new members** and leaders.



# Common Basis

There are no differences between sectors (medical, research, nuclear industry) whereby RP Culture can be understood as **a combination of habits and knowledge of RP:**

1. in all its aspects for patients, workers, population and environment,
2. and in all exposure situations,
3. combining scientific and social dimensions.



# Questions during the IRPA meetings

- What are **the elements of the culture** and how could we define it?
- Is it possible to **assess the RP culture** and what could be the criteria?
- How to **engage the stakeholders** (regulators, operators, professional organizations...) in the process of developing RP culture.
- What is **the role of RP professionals and IRPA AS** with regard to RP culture?
- How is **regional culture** included?
- What are the **criteria for success**?



# Enhancing RP Culture is a Process

IRPA's Guiding Principles incorporate approaches from different countries and regions of the world, and from different sectors: medicine, industry and regulators.



2nd IRPA Workshop on Radiation Protection Culture  
Thursday 10 and Friday 11 February 2011



1st IRPA Workshop on Radiation Protection Culture

organised by



International Relation Commission



Jornada de Cultura de la Protección Radiológica  
Día 15 de junio de 2.009  
Cátedra Rafael Mariño del Instituto de Ingeniería de España, Madrid

El objeto de esta Jornada es presentar las manifestaciones concretas de la cultura organizativa y su influencia en los resultados y en la producción radiológica de la radiación y dar a conocer las competencias mínimas y potenciales organizativas necesarias para gestionar los complejidades observadas en organizaciones que requieren elevados estándares de fiabilidad y seguridad.  
La Jornada está dirigida a profesionales de la protección radiológica con responsabilidades sobre la radiación y sus parámetros que la generan.

CULTURA ORGANIZATIVA, CULTURA DE SEGURIDAD Y DE LA PROTECCIÓN RADIOLÓGICA. INTEGRACIÓN DE LA CULTURA EN EL MODELO DE GESTIÓN. EVALUACIONES PRODUCTIVAS DE LA CULTURA, TÉCNICAS DE BIENESTAR. MEDICIÓN DE LA CULTURA DE LA PROTECCIÓN RADIOLÓGICA. INFLUENCIA DE LOS OBJETIVOS Y DE LOS COSTORES EN EL DESARROLLO DE LA CULTURA. LIDERAZGO, COMPETENCIAS DIRECTIVAS.



con la colaboración de:



UNION INTERNATIONALE DES CHEMINS DE FER  
16, rue Jean Rey  
75015 PARIS



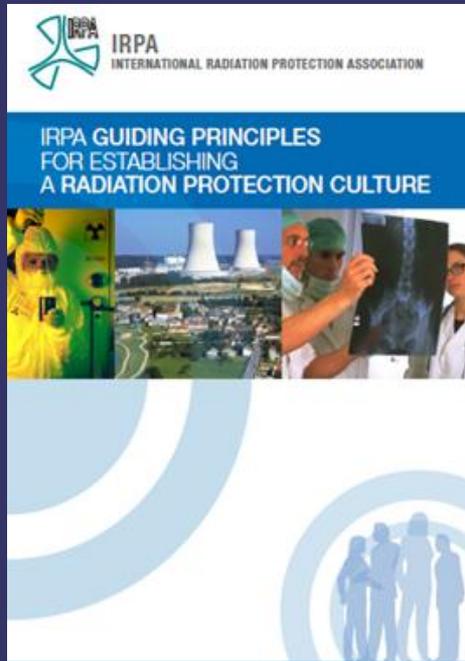
## Objectives

- to foster a belief in the success of cultural approaches,
- and to provide guidance to help equip radiation protection professionals to promote a successful RP culture in their organisation and workplace.

**Embedding RP at a cultural level within an organization is by far the most effective way of delivering the performance to which we all aspire.**

## Content

1. Purpose and scope
2. Introduction
3. Elements and Traits of an RP Culture
4. Developing an RP Culture, and Criteria of Success
5. Assessment of RP Culture
6. The Role of RP Professionals
7. Involvement with Other Stakeholders
8. The Role of Associate Societies
9. Conclusion



- **The first IRPA guide on radiation protection culture was released in 2014**
- **and**
- **was officially presented at the IRPA congress in Geneva in June 2014 .**



# Process - Next Steps

- IRPA wanted to explore the possibility of developing more practical guidance for the medical sector in association with IOMP, WHO and all RP professionals
  - On the occasion of the Asian and African regional congresses, I suggested getting together with the WHO (World Health Organisation) and the IOMP (International Organisation for Medical Physics) to work on a new initiative with one goal
  - **A joint publication of a second guide** - this time focusing on **radiation protection culture in medicine.**





- **The consultation principle will be the same as the one applied when preparing the first guide,**
  - **i.e. the possibility of holding meetings in the form of 3 round table sessions on each continent with the participation of regional players :**
    - **representatives of professional medical associations of physicians,**
    - **patients**
    - **and regulators, as well as of medical equipment vendors).**
  - **The aim is to record their recommendations, post them on the IRPA website and thus gradually expand on these efforts, taking account of regional issues and needs.**



# The 2001 Malaga Conference, the International Action Plan for the Radiological Protection of Patients

- The relevant actions considered were:
  - 1) **Education and training** (including digital radiology, CT, interventional. new techniques in radiotherapy, etc)
  - 2) **Information exchange** (including prevention of accidents)
  - 3) **Assistance** (including the role of medical physicists, technologists, audit services, etc)
  - 4) **Guidance** (including cooperation with the radiology industry)
  - 5) **Appraisal and other services** (including development of local diagnostic reference levels, infrastructure, QA etc)
  - 6) **Coordinated research activities.**



# A practical example of engagement with stakeholders (role of manufacturers)

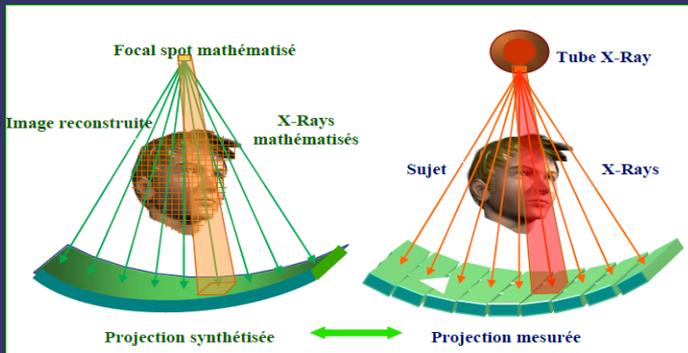


- How to involve manufacturers, designers, and vendors ? with compelling evidence showing that RP is a selling point, thereby decreasing radiation dose received from x-rays.

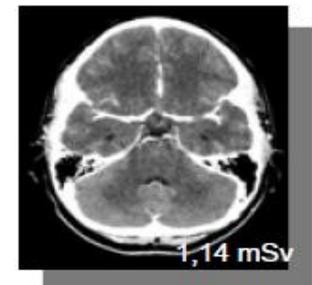
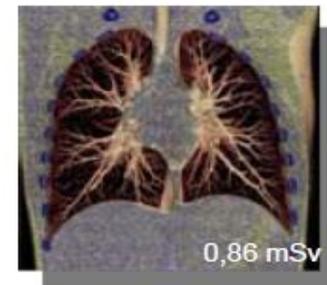
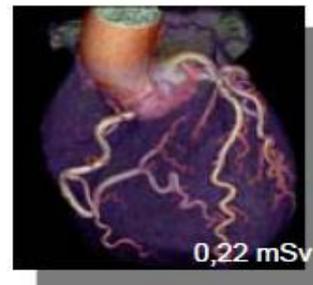
## Adaptive Statistical Iterative Reconstruction

- Iterative reconstruction

- Gradual implementation
- 20% dose reduction in adults**



1 mSv Cardio , Neuro, Colonographie & Thorax  
2 mSv pour Abdomen / Pelvis



**But technique is not enough;  
let's start by challenging our  
own practices...**



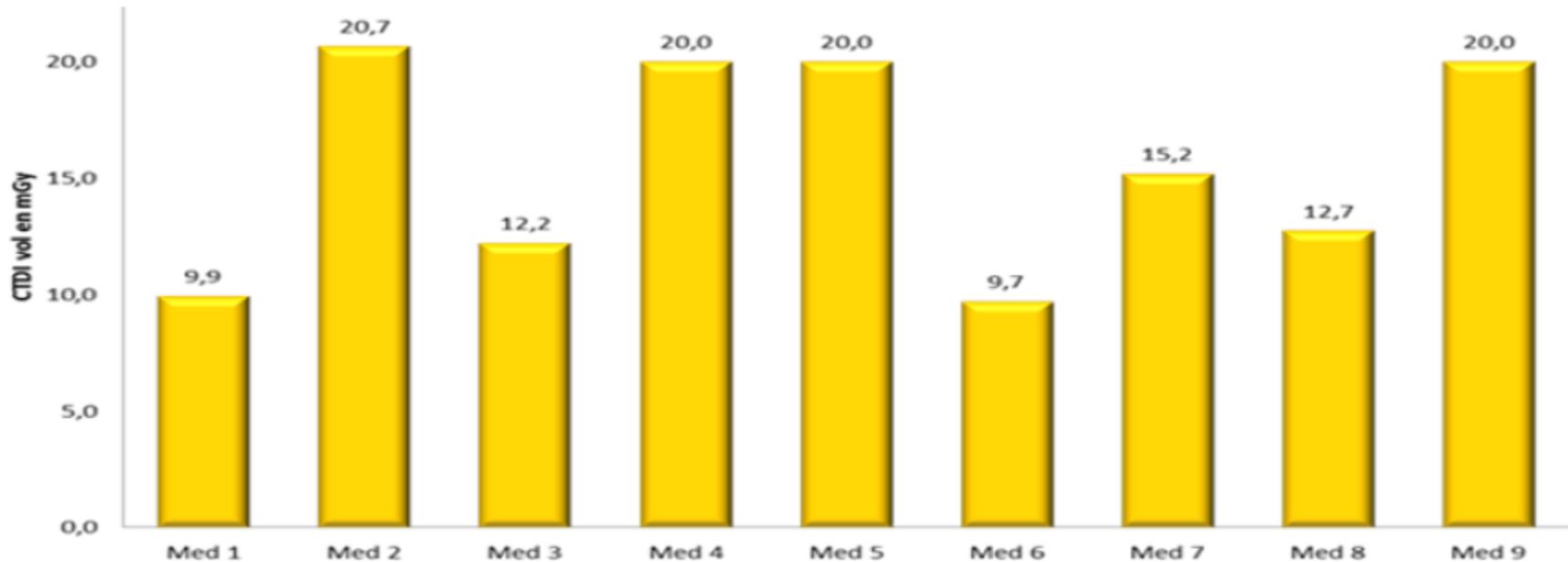
# Analysing one's own practices: same hospital, same equipment. Night shift VS day shift

Percentage of alerts per time slot (24h format) - Period from 08/30 to 09/11





# Same CT exam- abdomen and pelvis – doses delivered by different radiologists



**Dose reduction is desirable  
in daily practice  
and requires  
the establishment  
of reference levels**



**The establishment of  
"good practices" requires  
a minimum level of  
standardisation**



Natural Instincts

RP

RP Culture

Supervision

Self

Teams

Injury Rates

**Reactive**

- Safety by Natural Instinct
- Compliance is the Goal
- Delegated to Safety Manager
- Lack of Management Involvement

**Dependent**

- Management Commitment
- Condition of Employment
- Fear/Discipline
- Rules/Procedures
- Supervisor Control, Emphasis, and Goals
- Value All People
- Training

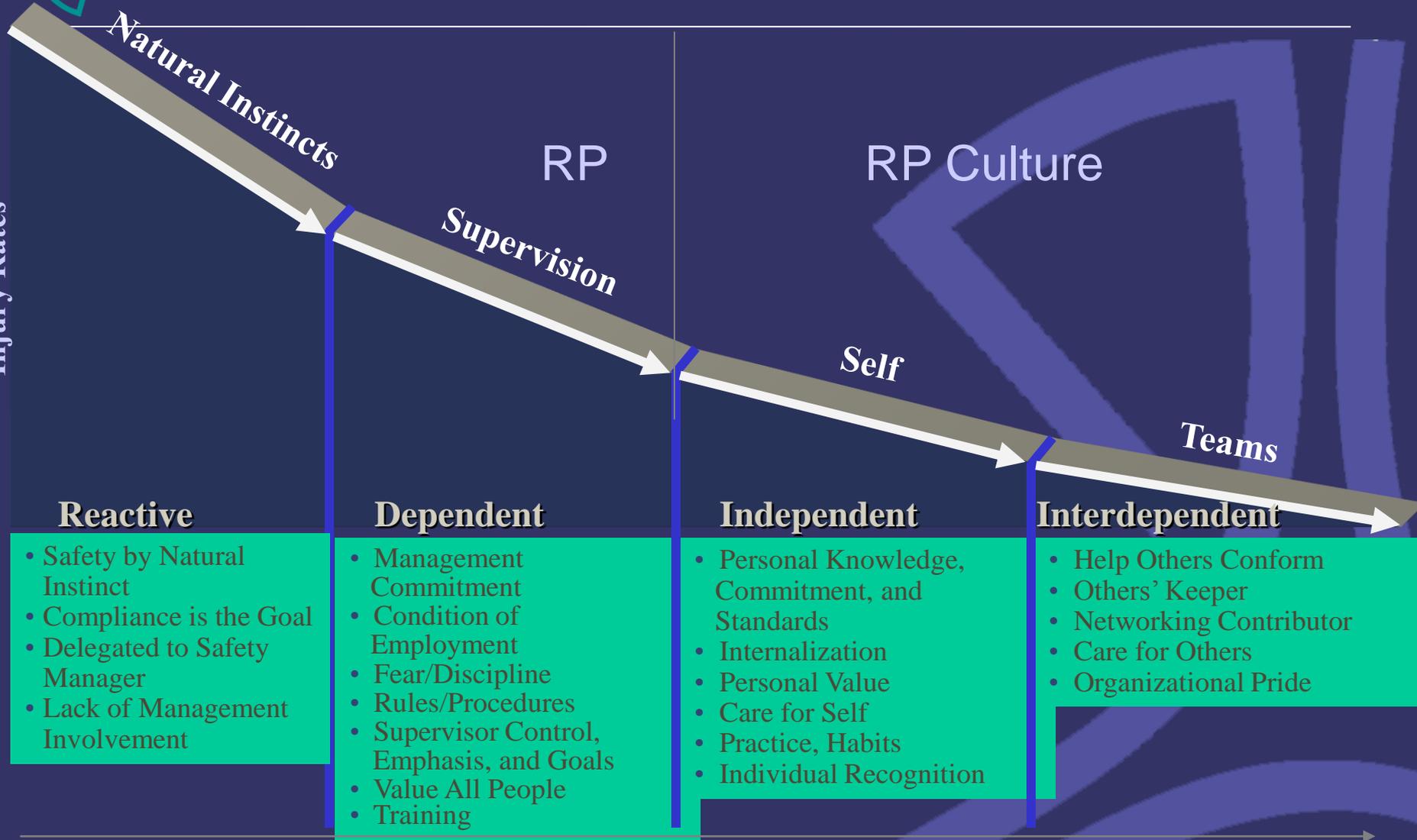
**Independent**

- Personal Knowledge, Commitment, and Standards
- Internalization
- Personal Value
- Care for Self
- Practice, Habits
- Individual Recognition

**Interdependent**

- Help Others Conform
- Others' Keeper
- Networking Contributor
- Care for Others
- Organizational Pride

TIME





# The zero risk doesn't exist , Process must be fault tolerant that's why ...

- Responsibilities must be Understood
- Responsibilities must be Manageable
- Early Warnings must be Available
- Must Learn from others Mistakes
- Corrective Actions must Occur
- Audits must be Conducted
- Peer Review must Happen
- Process should be Accredited
- patients must be heard



# The IRPA-IOMP- WHO meeting in Buenos-Aires

- For the South American countries
- conducted in English and Spanish with simultaneous translation to facilitate the participation of local players.
- Topics chosen for discussion for this first workshop are
  - **the key components of radiation protection culture,**
  - **the current perspective on RP culture in medicine in South American countries,**
  - **and current priorities for establishing a strong culture in medicine.**



- **I wish you a very fruitfull**



**World Health  
Organization**



**14:25h** Explanation to the plenary on break out groups composition and working procedures, logistic arrangements at meeting rooms

### **14:45 Break-out group sessions: Establishing RP culture in medicine**

Three groups will identify the key elements to be considered in the process of establishing and maintaining radiation protection culture in health care settings, and will propose a preliminary framework that will provide a basis for the future development of the guidance document.

Topics to be addressed:

1. Key elements for the establishment of RP culture in medicine.
  2. Current priorities for building a solid RP culture in health care settings
  3. Relevant stakeholders in RP culture in medicine
  4. Current vision on RP culture in Medicine in Latin America
- 
- Proposed framework
  - Conclusions, recommendations for the plenary



## **17:10h Plenary Session 5: A guidance document presenting principles and key elements for the establishment and maintenance of RP Culture in Medicine (50 min)**

Expected project output: a guidance document providing a framework including key factors associated with the establishment, maintenance and strengthening of RP culture in medical settings.

Topic for discussion in this session

- Future guidance document
  - Objective, target audience
  - Content outline
  - Structure, format, language/s
  - Related products (leaflets, implementation tools, check-lists)
- Next steps

Concluding remarks