

# Monthly radiation protection training of workers: an evaluation of two years operational practice

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# European Directive 96/29/Euratom

...member states shall require the undertaking to arrange for **relevant training** in the field of radiation protection to be given to exposed workers, apprentices and students...

# The Belgian regulation RD 20/07/2001, Art. 25

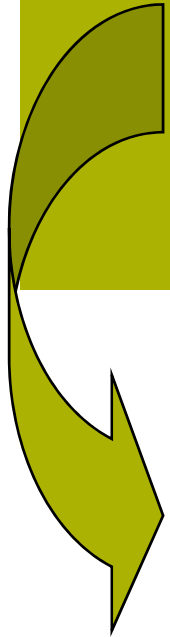
...adds the requirement that the information given to workers should also be **repeated on a regular base, depending the need and minimum once a year**

Room for interpretation

Can be fitted in differently, depending on the type of organisation

# Situation in a large medical centre

- ~ 500 occupationally exposed workers in:
- Biomedical research
  - Isotope production
  - Medical applications



Wide range in education levels

Wide variety of procedures

High to very high workload

# Radiation protection training

- At the start of the employment
- On demand of the department
- On the job training, at the introduction of new applications

And ... introducing training on a regular base for the specific practice of the different worker groups

# Why direct communication?

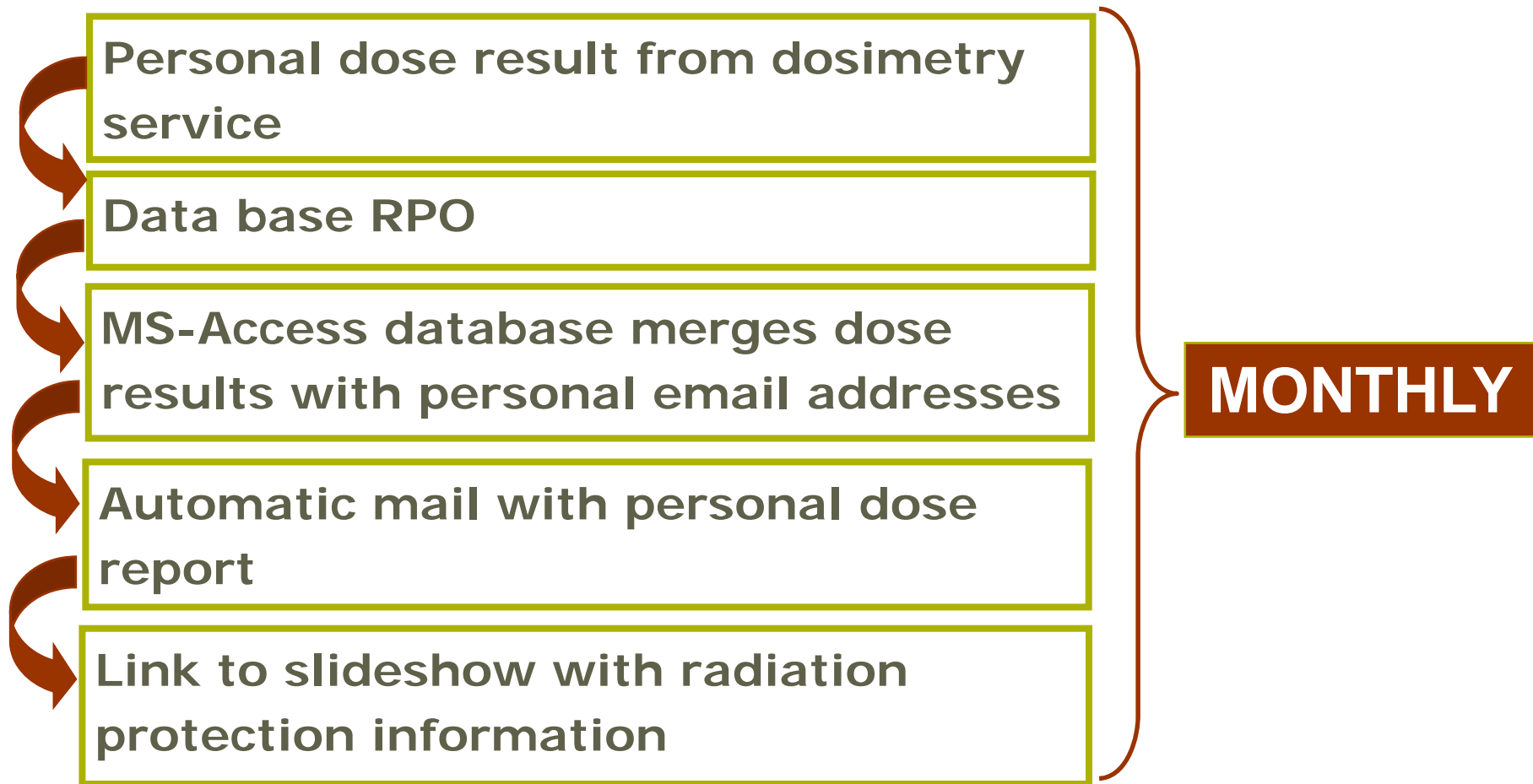
## **Of dose results**

- Once a year (occupational physician) is inadequate
- Communication through the supervisor can fail
- Workers need to know the order of magnitude of their exposure

## **Of radiation protection topics**

- To increase the awareness
- To point out 'hot topics'
- To ensure continuity in basic training

# Concept



# Dose results and Radiation protection information

## Dose results jun-2009

Hp(0.07): value of measured skin dose

Hp(10): value of the measured depth dose, representing total body dose

Name	Group	Code	Personal-number	Month dose		Total 12 months	
				Hp(0,07) (mSv)	Hp(10) (mSv)	Hp(0,07) (mSv)	Hp(10) (mSv)
Berus Danielle	501	0	00003	0.00	0.00	0.00	0.00

### Monthly information:

Since last month you know that the eye lens is very sensitive to ionising radiation. Read at following link how to avoid irradiation of the eyes. (CTRL+CLICK)

<http://homepages.vub.ac.be/~fyscon/200907UK.pps>

### Topics

- General radiation protection
- Regulatory framework and responsibilities
- Practical radiation protection
- Information for specific groups

In Radiotherapy high-energy radiation is produced.  
How do we protect workers and members of the public against this radiation?



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# Evaluation of the training tool

Through a questionnaire 100 workers were asked:

If they received the dose report

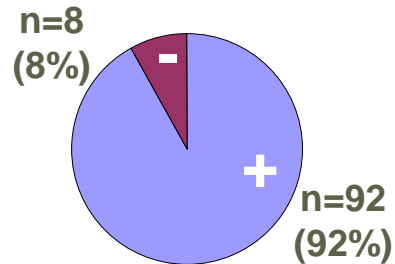
If they noticed the link to the information

If they were actually reading the information

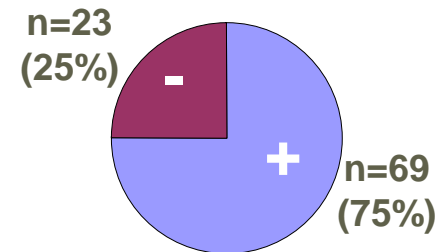
Their opinion of the usefulness of this training tool

# Overall results

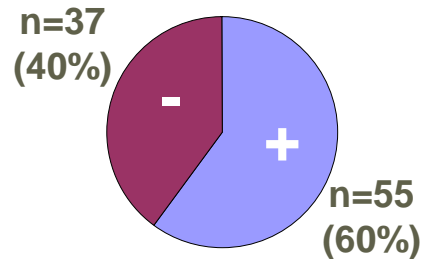
How many workers were using the digital tool?



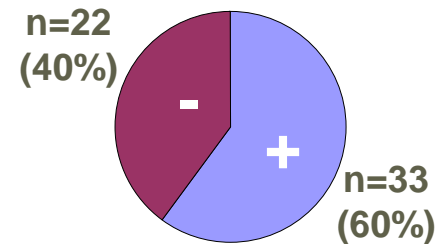
How many workers were aware of their exposure level?



How many workers noticed the link to the RP information?



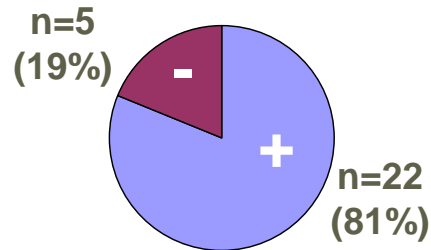
How many workers were actually reading the info?



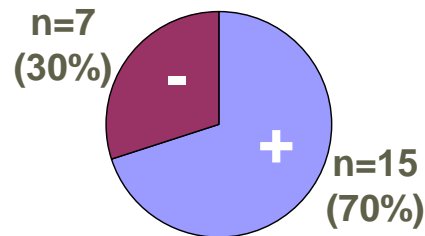
# Influence of exposure level

## Measurable dose

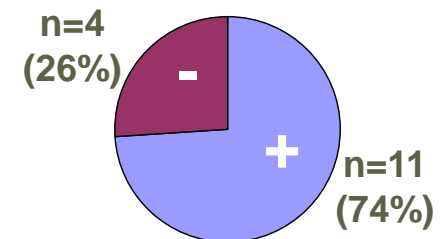
Know the dose level?



Noticed the link?

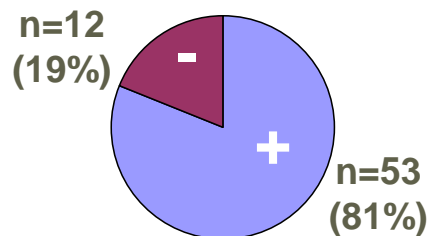


Are reading the info?

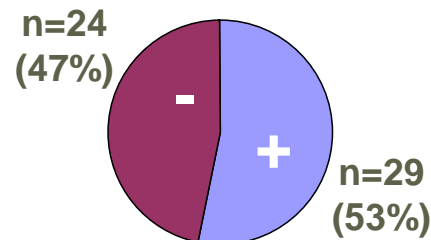


## Non-measurable dose

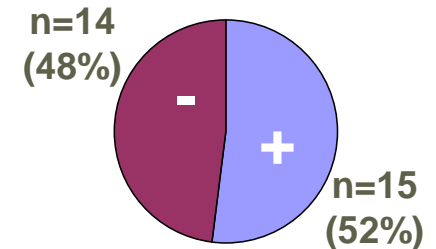
Know the dose level?



Noticed the link?



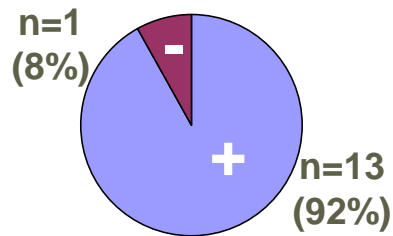
Are reading the info?



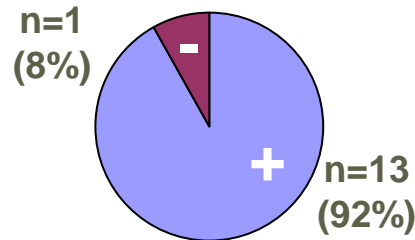
# Influence of background education

## Higher education in nuclear science/RP

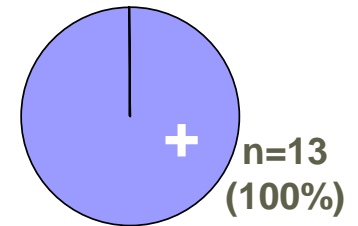
Know the dose level?



Noticed the link?

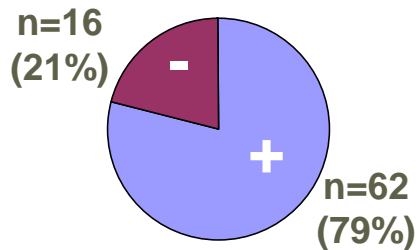


Are reading the info?

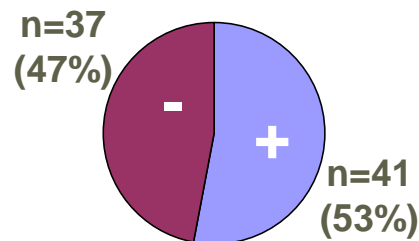


## Other groups

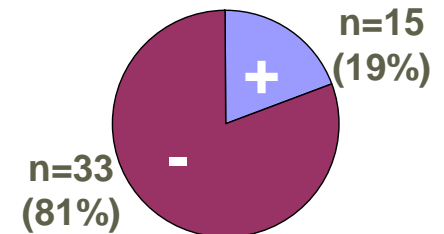
Know the dose level?



Noticed the link?



Are reading the info?



# Main findings

## **Influence of exposure level**

Occupationally exposed workers are more interested in RP information when they have dose above reporting level

## **Influence of higher RP education**

Workers with higher education in nuclear science are more interested in RP information, the other group behaves quite indifferently

# Need for improvement

**Overall** the RP information is only reaching 33% of the occupationally exposed workers and needs some improvement

- The link to the slideshow has to be made more visible
- A introduction to newcomers is necessary
- The information needs to become available for workers without access to a pc

# General conclusions

Motivation and interest of the workers determine the usefulness of the training tool

- **independent from the workload**
- **increases with dose level**

Workers are satisfied with monthly update of the dose report

The information is reaching the workers who can be considered as the main target group

# Thank you for your attention

