National Institute for Public Health
and the Environment
Ministry of Health, Welfare and Sport

Survey of Health Physics Research and Education in the Netherlands

Authors: Harmen Bijwaard[1], Harry Slaper[1] and Fieke Dekkers[1]

[1] National Institute for Public Health and the Environment (RIVM), Bilthoven, The Netherlands

Contact: harmen.bijwaard@rivm.nl

Background

A survey of health physics research and education in the Netherlands was conducted to investigate the Dutch Health Council's concern that health physics research is declining, which might impair future radiation protection in the Netherlands.

Survey Setup

First, a search was conducted to identify researchers and organisations in the field of health physics. Second, a questionnaire was sent out with specific questions about number of personnel/students involved, trends in these data, research interests, and so on.

Survey Results

The questionnaire was sent to 90 persons, 50% of whom responded. However, these respondents produce about 75% of all scientific papers. The results show:

- 71% agree health physics research is decreasing (fig 1)

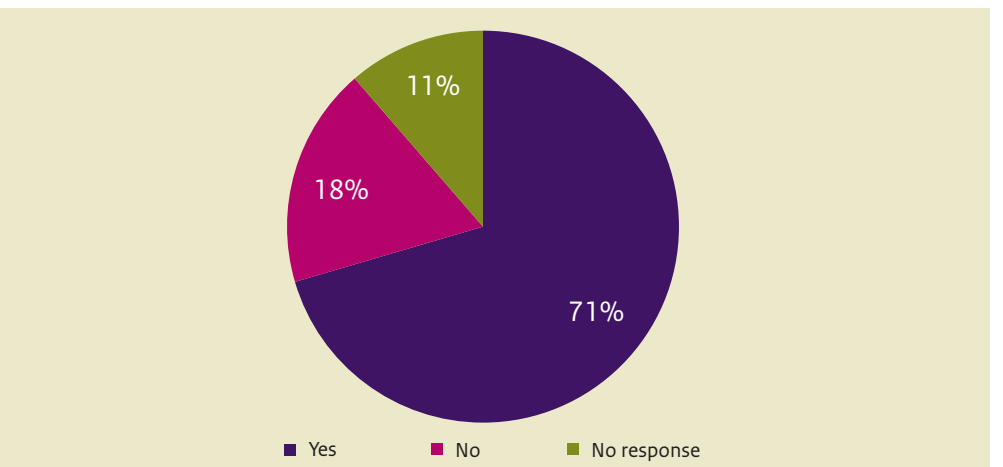

Figure 1: Agreement to Health Council's concern of decrease in health physics research.

- 36% are involved in research (in diverse disciplines)
- Most in Dosimetry, Radiobiology and Radiology
- In total 87 FTE, 19% temporary, 19% supportive
- Most research groups are 0-5 FTE, none > 50 FTE
- Output: 127 reviewed and 134 other publications/year
- Average age 43,2 years (vs. 41,0 for all professions)
- Most groups have shrunk over last 5 years (fig 2)

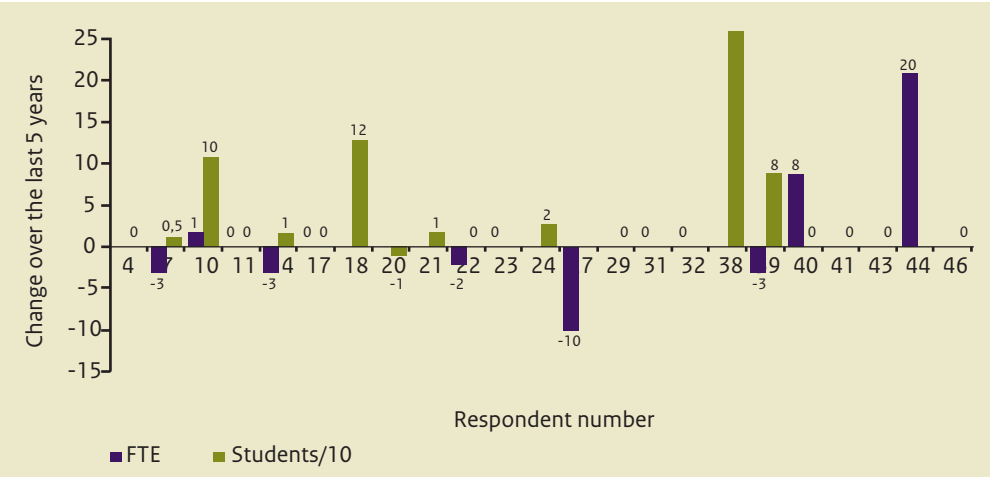

Figure 2: Change in numbers of FTE and students over last 5 years.

- All expect further decrease/no change for next 5 years
- Medical research (including radiotherapy-related Radiobiology and Animal experiments) has increased
- Dosimetry, Risk analysis, Epidemiology and Non-destructive research have decreased
- More/less research needed in diverse disciplines (fig 3)

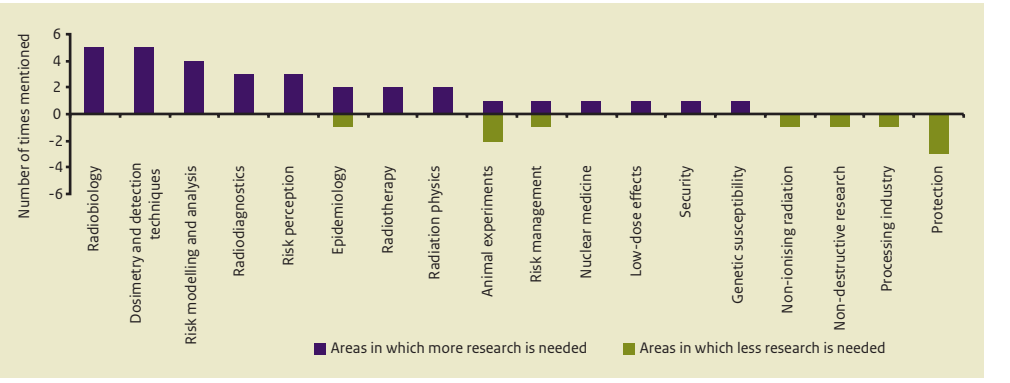

Figure 3: Disciplines in which more/less research is needed.

- 50% of all respondents are involved in education
- Most in Radiation protection, Dosimetry, Radio(bio)logy
- In total 4404 hours (157 ECTS) for 5234 students
- A rise of 2339 hours (84 ECTS) is expected in 5 years
- 2735 more students in last 5 years (see fig 2)
- 425 more students expected for next 5 years
- More/less education needed in diverse disciplines (fig 4)

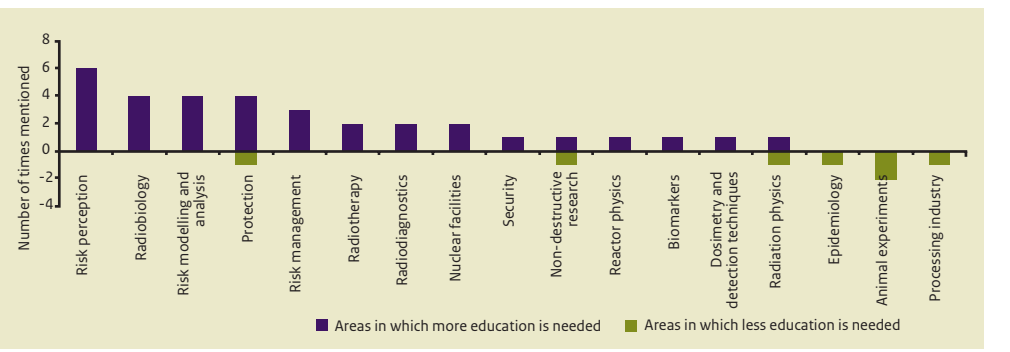

Figure 4: Disciplines in which more/less education is needed.

Consequences

(Dutch) issues that require health physics expertise:

- Increasing medical exposures
- Renewal and possible extension of nuclear facilities
- Radioactive waste management
- Indoor radon/thoron exposure
- Fundamental (radiobiological) research

The survey results suggest future manpower for the first issue, but not for the other ones.

It can be concluded that a shortage in several health physics expertises, as already suggested by the Dutch Health Council, can be expected in the Netherlands in the near future unless actions are taken to prevent this.

Acknowledgements

We thank the Dutch Ministry of Economic Affairs, Agriculture and Innovation, the Dutch Society for Radiation Protection and the Guidance Committee for their support.

Published by
National Institute for Public Health and the Environment
P.O. Box 1 | 3720 BA Bilthoven
www.rivm.nl

003684