Schweizerische Gesellschaft für Strahlenbiologie und Medizinische Physik
Société Suisse de Radiobiologie et de Physique Médicale
Società Svizzera di Radiobiologia e di Fisica Medica

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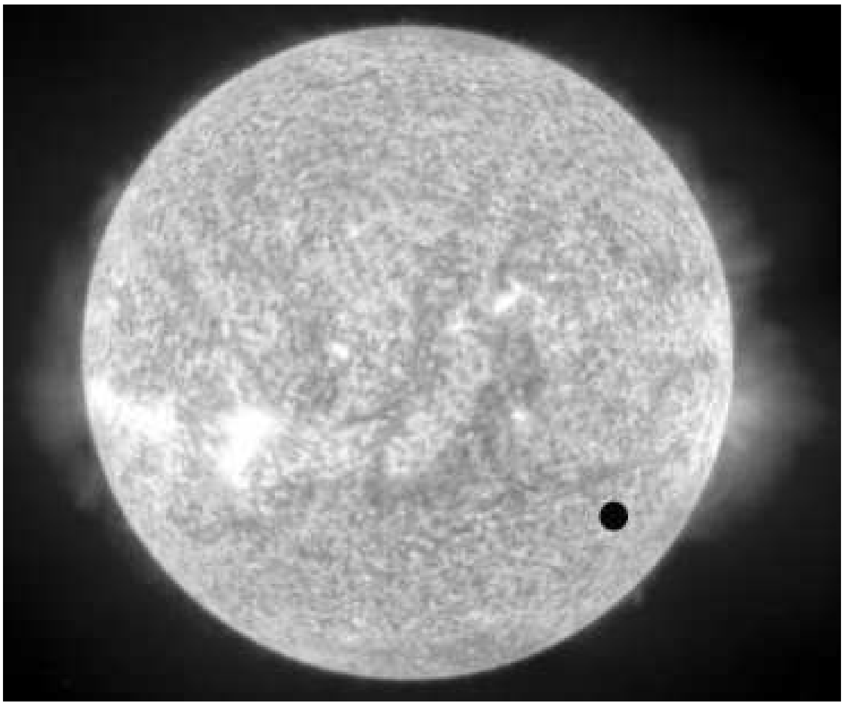

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B U L L E T I N 7 6

July 2012

President's letter

Dear colleagues,

If you read this Bulletin, it is because two of our colleagues spend time to collect information and put it together for you. Each time I can, I express my gratitude to Shelley Bulling and Regina Müller for their important work. However, they would like reinforcements and are looking for someone who would be interested in participating in editing the Bulletin. If you would like to join them, and find out what is happening in medical physics in Switzerland as soon as it happens, please send them an email.

I also wish to deeply thank Hans Schiefer and Wolf Seelentag for the report of the results of the 2011 TLD intercomparison and for the enormous amount of work that they did to design, organize and perform the intercomparison. The external dose audit that the intercomparison provides is an extremely important quality assurance check. This year photon beams were checked and you can see the results in these pages.

The annual ESTRO meeting recently took place in Barcelona. Besides the fact that the location was really enjoyable, it also showed the active contribution of Swiss medical physics in Europe. There was an important participation from our members and many excellent oral talks and posters were presented by them. Our visibility will be further enhanced by two important ESTRO events that will take place in Switzerland: the ESTRO IGRT course which will be held in Lausanne from 18-22 November 2012, and more importantly, the ESTRO 2013 annual meeting which will be held in Geneva in April 2013. The local organizing committee is already working on making that event a great opportunity to show how medical physics is active in Switzerland. I thank all our Society members who are working for medical physics at the European level.

Some news from Art. 74 al. 7… The process is now on track. According to BAG, enough centers or companies have indicated their interest to offer services to perform the requirements of art. 74 al 7. to fulfill the demand in Switzerland. In order to improve (or refresh) our knowledge in the field of medical imaging and nuclear medicine, SSRMP has organized two 2-day continuing education teaching courses in Summer (June 19-20 in Lausanne) and Fall (27-28 September in Bern). These teaching courses received a great response and are already full. They will almost certainly be repeated again next year.

By the way, these teaching courses in medical imaging and nuclear medicine will be followed by representatives of BAG. You might remember that the regulation states that a medical physicist should have three weeks of education in radiation protection in order to be certified. In fact, most of us have only two weeks of education (the "normal" radiation protection course). For some time now, we have been looking for a solution to fulfill the regulation. These four education days in medical imaging and nuclear medicine may be augmented in the future by one additional day on radiation therapy topics, as a possible good solution to this problem.

You will find in this Bulletin a summary of the survey on the position of the medical physicist in Switzerland. A small presentation of the results was given during the Dreiländertagung meeting last year in Wien. There are interesting statements about our profession in that report.

This year is an election year for our Society. That means that the president, chairs of committees and board members will be renewed during the general assembly that will take place in Biel on the 15th of November. All the actual members and chairs have expressed their intention to ask for a renewal of their position. However, any member willing to be part of the SSRMP board is warmly invited to send an email to our secretary Daniel Vetterli (Daniel.vetterli@radioonkologie.ch) mentioning which position she or he would like to apply for. The applications will be open until the start of the election process and, to answer the concerns of some our members about the election process, there will be no ballot with names already written in. More information will be sent to you with the invitation to the general assembly. If you have a colleague who you think would make a good board member, now is the time to encourage them!

Another special event will happen during the general assembly. The board has decided to propose a new honorary member for our Society. The general assembly will therefore have to vote on that proposal. Would you like to know the name of our colleague that the board wishes to honor for his/her career and the important contribution he/she offered to our Society? Well, I will let you make some conjectures during the summer, that I wish you hot and sunny…

As usual, you will find much more information in the Bulletin and you are encouraged to participate by sending reports, reviews, information, etc… to our editors.

Enjoy your Bulletin!

Meilleures salutations de Lausanne,

Raphaël Moeckli

Professional Affairs Committee News

Situation of Medical Physicists in Switzerland – A self assessment

Authors: Jean-Yves Ray[1], Léon André[2], Angelika Pfäfflin[3], Stephan Klöck[4]

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Summary

With the aim to evaluate the status and needs of its members and to adapt its strategy correspondingly, the former Swiss Professional Association of Medical Physicists (SPAMP) conducted a survey of its current membership on professional status, daily concerns, self reflection and expectations for the future. The professional affairs committee of the Swiss Society of Radiobiology and Medical Physics (SSRMP), as the successor of SPAMP, analyzed the results which are presented here.

Introduction

The Swiss Professional Association of Medical Physicists (SPAMP) was created in November 2002 as a sub society of the Swiss Society of Radiobiology and Medical Physics (SSRMP). As the latter represents a broad range of scientists but all interested in radiation biology or physics, a specific structure was needed to address current professional concerns of the medical physicist sub group. SPAMP found a tortuous road in setting up its profile. Putting people together with one goal happened to be more difficult than previously thought. Therefore, SPAMP paid attention in refining its aims by tentatively matching its members' expectations. In that circumstance, the survey, whose results are presented here, was conducted to get the required objective figures. Not only SPAMP but also SSRMP medical physicist members were targeted. Despite the great efforts engaged, SPAMP did not succeed in gaining its membership adherence. Another issue was effectiveness: the human resources, necessary to run and coordinate two different societies with overlapping scopes were missing for the work on contents. Finally, SPAMP was dissolved and its mission assigned to two permanent committees of SSRMP.

Materials and Methods

At the end of 2009, all physicists of SSRMP were invited to anonymously participate in an electronic survey developed by a working group of SPAMP. It consisted of 65 questions investigating various topics of the daily professional conditions of a medical physicist working in Switzerland such as position, education and future visions. It was divided into three questionnaires measuring several aspects of the medical physicist profession:

- Expectations and current professional status were surveyed along with their relationships to other co-workers;
- Global satisfaction was based on the expected and current duties and salary;
- Visions and opinions about the future were enquired based on the members' needs. Topics like the organizational structure of the medical physics community and the development of a medical physics education scheme in Switzerland were, among others, put under evaluation.

Results and Discussion

A total of 161 invitations to participate in the survey were sent out of which 64 people (40%) took part in with different levels of involvement. Forty-nine answered all three questionnaires and 15 stopped without completing the third part. Indeed, that may be explained by the rather long time, about 90 minutes, required for carefully completing all three parts. Unfortunately, 75 people (47%) did not participate in the questions while 11 (7%) did but gave no answer at all.

Among the respondents indicating themselves as "medical physicists" working in clinical environment, 84% (51) of them are active in other fields. The work in other fields was represented with 56% (34) additionally or strictly involved in research and development, and 26% (16) with teaching as a significant duty. In terms of the medical physics disciplines, 90% (55) are active in radiation oncology, 25% (15) in radiation protection, 15% (9) in radiology and 13% (8) in nuclear medicine. Hence, clinical physicists in radiation oncology (80%/49) prevail in this survey.

Position

Overall, a fairly high global satisfaction (95%) is measured despite recurrent management and resource related bothers. Sixty percent state that they operate in accordance with their specified duties. This leaves about 30% spending more than 30% of their daily workload on tasks of which they are not in charge. Nevertheless, 76% feel adequately challenged. Reported daily motivations are innovative and exciting projects, and teamwork. The main problems seen are distributed nearly equally at about 30% each: lack of time to complete the job, deficiency of acknowledgement from superior's relationship, restrictive organizational and management resources. Only 10% reported collaboration and team related difficulties.

As improvements for solving those difficulties, the major proposed supporting measures are better management (29%) and greater resources (14%). The former includes human, organizational, time and hierarchical facets, while the latter obvious manpower and financial facets. Moreover, as future measures, 50% would delegate main periodical quality assurance tasks to radiographers thus leaving time available for more scientific and development involvement. A total of 44% would request additional medical physicist positions (1-3) for enhancing radiology physics, research and development but also clinical services. However, 46% seem adequately staffed. Among the various proposals, support provided by the society was mentioned only three times surprisingly.

The medical physicist profession is highly demanding. A vast majority (85%) indicate they assume overtime work and special assignments. Although 45% would like to work on a part time basis, 85% of the respondents work full time. 57% are satisfied with their salary. Nevertheless, 41% rated it as too low and do not foresee any raise although 50% reported they would aim at a position with salary and workload equivalent to the physician. Again, only a few (16%) requested support from their society.

Regarding other professional group involvement like physicians and radiographers, 86% of medical physicists feel valued, mainly when implementing new technologies, teaching and collaborating in mutual scientific projects. Their relationships are described as collegial, collaborative, professional and respectful.

Within the 60% who do not consider themselves as the head of a group, 45% only have a medical physicist as direct chief. Therefore, 15% have no medical physicist leader but certainly a radiation oncologist. About 30% of those who consider themselves to act as head of the medical physics group have a radiation oncologist as chief. No significant correlation was found between dissatisfaction and the category of chief.

Education

Eighty percent of respondents hold the Swiss professional certification in medical physics and most agree on how important it is for them and their employer. Another 22% additionally hold a foreign certification. The larger group (47%) did qualify for the Swiss professional certification by an individual learning scheme composed of dedicated teaching courses, personal readings and on job practical trainings. This is explained by the lack of Swiss university programs committed to medical physics. Still, 21% obtained their certification following a Master of advanced studies at the Swiss federal institute of technology in Zürich and 18% based on a Master of Science (MSc) course in medical physics of a foreign university. In order to accomplish their practical trainings, most graduates were offered positions in university (64%) and public (33%) hospitals. Only 3% completed their training in a private institute.

Continuous education is pretty well established with 70% of participants stating that the working time dedicated for continuous education fits their expectations. In detail, 53% wished about 10% working time for continuous education but only 30% effectively get it. A quarter (25%) receive what they expect, i.e. 5% dedicated for continuous education. When wishes for continuous education reached as high as 20% or more, 14% still indicated they could obtain such an amount of time.

Future

Even if knowhow in medical physics is maintained at a good level, it cannot sustain the growth in the field of radiation oncology observed in the last few years. The number of medical physicists trained in Switzerland is far too few to satisfy the needs. Moreover, new positions are being created in the field of radiology nowadays, thereby increasing the pressure to train additional medical physicists. But indeed, academic medical physics is poorly represented, and very few residency positions are available. Hence, a plan for setting up an education program in medical physics was proposed in the survey as a new development. Setting up two faculties of medical physics, launching an MSc teaching course for each, is well supported by 70% of respondents. Also 70% indicate they would offer between one to two residency positions for periods ranging - a few months to three years (48%) and - weeks to a few months (15%). However, restricting residencies to university clinics found only small support with 17%.

Concerning their community, 76% are satisfied with the actual scientific exchange framework that is described mainly as SSRMP based events, and other Swiss and international societies' events (SASRO, ESTRO, DGMP, ...).

Enhancing SSRMP offers with dedicated educational courses and tutorials was proposed as a further improvement. A total of 90% also confirm the needs for an independent and dedicated scientific platform and a strong professional representation. As well as 64% finding the tasks assigned to the SPAMP important and therefore deserve to be pursued. However, improvements in operating SPAMP are frequently suggested. Managing two societies amongst the same group of active people showed some redundancies and poor performances. The structure proved to lack efficiency.

CONCLUSIONS

In June 2010, the professional society of medical physics SPAMP was finally dissolved by its members and tasks were transferred to the SSRMP committees of professional affairs and education. The survey strengthened the executive committee in reorganizing SSRMP structures in a way such that education and professional affairs became integrative and institutionally part of the society along with science. Communication and operation are now efficiently established between the executive board and its dedicated committees.

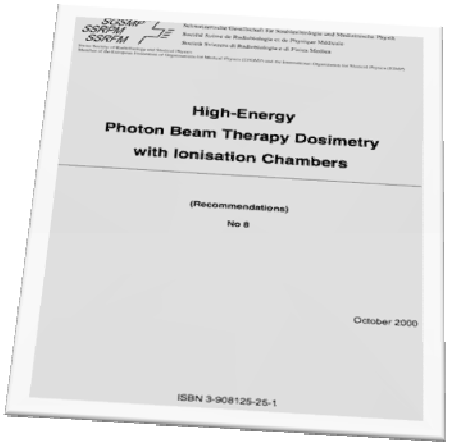
The national salary survey has been carrying on as the executive board still supports it as a complementary measure for evaluating medical physicists' conditions in Switzerland. Participation in the salary survey 2010 was higher than previous ones with a successful 57% response rate. Plans for setting up an education scheme in medical physics also remains a long term aim to be pursued.

As conclusive statements, 86% of survey participants still recommend and promote medical physics to young scientists as an attractive and evolving profession. They find satisfaction in their job specifying their profession as independent, interdisciplinary, holding high responsibilities, and very helpful for human beings. Research opportunities and clinical synergies for optimizing efficiency of clinical methods make it very attractive. Hence, they would continue with medical physics in the following 5 years but 55% want improvements. More challenging projects and more research are expected. In terms of organization and relationship, more independence is desired. Frequently proposed is, the medical physics group in the clinic would be better organized as an independent unit or department providing medical physics services to a large panel of medical departments.

The former working group of SPAMP wishes to thank all participants for their contribution.

Reactivation of Working Group of Absolute Dosimetry for External Radiotherapy (Rec. No. 8, 9, and 10)

As discussed at the last AMP meeting in February 2012, it is necessary to re-evaluate the recommendations dealing with absolute dosimetry for external radiotherapy. In addition, the aim and methodology of the Swiss TLD inter-comparison with respect to new or adapted procedures on defining the calibration factors at Metas should be evaluated.



That's why a Working Group should be established to discuss these topics and to revise the existing recommendations. Of course, the quality of the working group depends on the quality and quantity of the participants. It is of great importance that you are contributing to this working group and give new inputs.

It is my pleasure to announce that in August/September 2012 a first meeting will be set up in order to launch this project. The first meeting is planned to take place in Bern and if you are interested in participating in this working group, you are welcome to contact

Peter Manser
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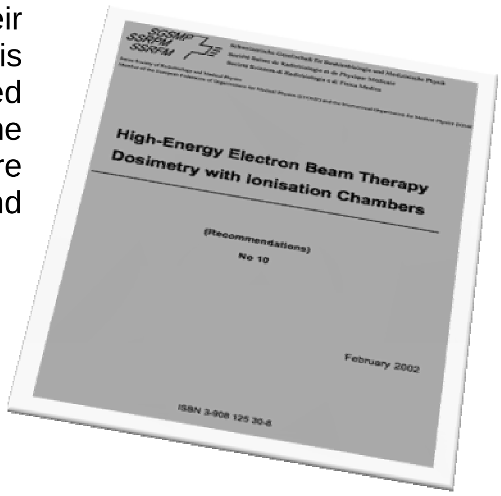
3010 Bern
peter.manser@insel.ch

I would like to thank all participants in advance for their inputs and their work. I am sure that the topic is interesting enough to attract senior, well-experienced medical physicists as well as young people and that the discussions will help the entire community to ensure that the "Gy" is accurately assessed and calibrated and that the procedures are well understood.



Peter Manser, Inselspital – University of Bern
Chair of AMP

Education Course on "Medical physics in Radiology and Nuclear Medicine"

Dear Colleagues,

SSRMP is offering two 2-day courses for medical physicists involved or soon-to-be involved in medical physics in the fields of diagnostic radiology or nuclear medicine.

The aim of the course is to review the physics of diagnostic radiology and nuclear medicine to ensure that the education of the SSRPM certified medical physicists complies with article 74.7 of the Swiss Radiological Protection Ordinance requirements. It will define the scope of tasks, duties and responsibilities that should be performed by SSRPM certified medical physicists to give the required support in nuclear medicine applications, fluoroscopy-guided interventional radiology and computer tomography.

Please take note that only a limited number of places (16) per course will be available.

Booked out

Subject: Diagnostic Radiology

- Quality assurance relating to patient dose:
  - Reliability of the displayed dose indicators (CTDI, DLP, DAP)
  - Verification of the X-ray beam collimation
  - Behavior of the X-ray tube modulation
  - Level of image quality produced for a given dose level
  - Adequacy of the imaging protocols with DRLs
- Patient dose estimation and verification:
  - Phantom measurements
  - Dose modeling
  - Analyzing individual patient dose protocols and comparison to DRLs
- Patient and staff dose optimization
- Legal aspect of radioprotection.
- Task of medical physicist in radiology.
- Practice (1 day).

Venue: **Lausanne**
Date and Time: **19th – 20th June 2012**
Fee: **700 CHF**

Subject: Nuclear Medicine

- Quality assurance relating to patient dose of a gamma camera and PET systems:
  - Level of image quality produced for a given activity
  - Correlation between algorithms and image quality
  - Adequacy of the imaging protocols with DRLs
- Patient dose estimation and verification:
  - Phantom measurements
  - Dose modeling
  - Analyzing individual patient dose protocols and comparison to DRLs
- Patient and staff dose optimization
- Legal aspect of radioprotection.
- Task of medical physicist in nuclear medicine.
- Practice (1 day).

Venue: **Bern, Inselspital**
Date and Time: **27th – 28th September 2012**
Fee: **700 CHF**

SGSMP SSRPM SSRFM

SSRMP Annual Scientific Meeting 2012

Kongresshaus Biel/Bienne
15th and 16th of November 2012


Kongresshaus Biel /Bienne

Invitation and Call for Abstracts

Dear Colleagues and Friends

The SSRMP annual scientific meeting 2012 will be held at the Kongresshaus Biel/Bienne and is jointly organized by the Radio-Onkologiezentrum Biel and the Division of Medical Radiation Physics of Inselspital – University Hospital Bern. The program will cover all medical physics topics of SSRMP. More information will be posted by June 2012 on the conference homepage through www.sgsmp.ch

Researchers in the field of medical physics are invited to submit abstracts online. Contributions of oral and poster presentations are welcomed. Please follow the corresponding guidelines which will be available on the conference homepage by June 2012. Although Biel is bilingual (French and German), the recommended conference language is English. The abstracts will be published in an abstract booklet provided at the meeting as well as in proceedings. The deadline for abstract submission is Monday September 3rd 2012.

There is no conference fee but registration is mandatory and must be performed online. On Thursday evening a social event will take place and more details will follow on the conference homepage.

We are looking forward to welcoming you in Biel.

On behalf of the organizing committee

Daniel Vetterli

Radio-Onkologiezentrum Biel-Seeland–Berner Jura
Centre de radio-oncologie Bienne–Seeland–Jura bernois

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Results of the TLD intercomparison 2011

It was the aim of last year's SSRMP intercomparison to check the absolute dosimetry of photon beams in a solid water phantom.

Altogether 28 institutions participated in the intercomparison. 131 beams have been checked.

Material and Methods

The same TLDs, tempering oven, TLD reader and cobalt machine used for reference measurements have been used as in earlier intercomparisons.

The phantom consisted of the same components as used for the electron dosimetry performed in 2010. The solid phantom was composed of two stacked Perspex phantom frames. The inner square was 4 cm in length, the outer diameter 10 cm x 10 cm. The frames have been filled with five plain RW3 blocks, and one block containing three TLDs (PTW Freiburg). The block dimensions were 40 mm x 40 mm x 10 mm. The phantom was placed on Perspex or water equivalent material (minimum 5 cm). This measurement setup followed in principle the setup used last year for electron beams. It is shown schematically in figure 1.

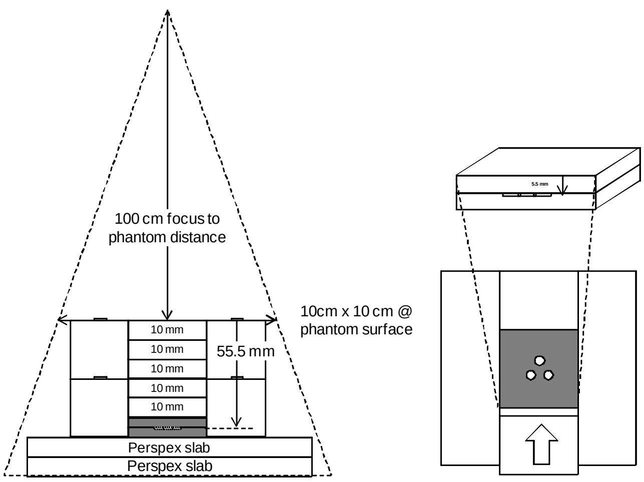


Figure 1: Frontal (left) and top view (right) of the solid phantom for photon dosimetry.

The measurement depth was 55.5 mm. The water equivalent material in the beam path next to the TLDs ensured that the percentage depth dose was comparable to the percentage depth dose in water.

The measurement setup for photon irradiations in the solid phantom was for all irradiations as follows: Dose to the TLDs as exact as possible 1.00 Gy; field size 10 cm x 10 cm, focus to surface distance 100 cm. Further details on the photon dosimetry setup are shown in the "instructions" which are appended to this report.

<u>Definition of the conversion factors phantom → water</u>

For the MU calculation the institutions had to assume that the phantom is fully water equivalent and provides for sufficient scatter, as in a large water phantom. Deviations from this assumption have been taken into account within the scope of the TLD evaluation with an energy dependent correction factor. In order to define the dosimetric ratio between the measurement in water – as applied in earlier intercomparisons – and the solid phantom measurement, six institutions performed the intercomparison in water as well as in the solid phantom. Altogether 23 beams have been checked in water as well as in the solid phantom.

Results

<u>Conversion factors phantom → water</u>

Table 1 shows the energy separated conversion factors derived from measurements in a water tank and in the solid phantom.

Table 1: Conversion factors from phantom to water

	Co	4X	6X	15X	18X
# mmts	1	1	12	5	4
mean	**0.994**	**0.993**	**0.996**	**1.004**	**1.003**
st.dev			**0.011**	**0.010**	**0.008**

The means of all factors are close to 1.000. The deviations from 1.000 are clearly smaller than the standard deviations of the conversion factors. It has been decided therefore to assume that the conversion factor is 1, independent of the beam energy. This implies that the phantom measurement setup is very close to the measurement setup in water, which was finally the aim of the phantom construction.

Results for 28 institutions

The results for 131 beam evaluations are presented in figure 2. The energy separated mean D_m/D_s values are close to 1; the mean D_m/D_s value including all beams is 0.999 ± 0.018. This means that the TLD calibration corresponds to the (mean) dosimetry of the institutions.

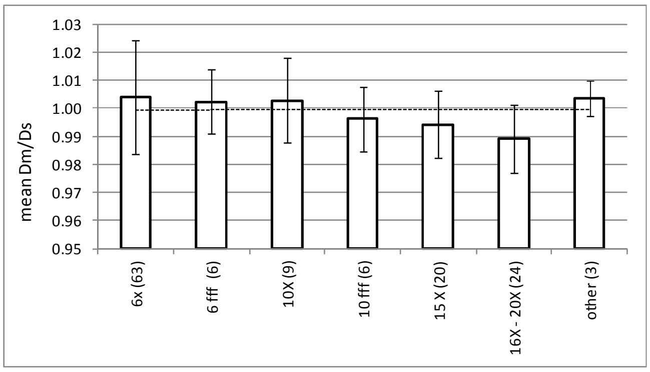


Figure 2: D_m/D_s values for 28 institutions and 132 beams. The number of beams is stated in brackets.

The histogram in figure 3 shows the distribution of the D_m/D_s values. 127 out of 131 beams are within 4% of the tolerance, which is considered as a satisfactory check. Three beams show a deviation larger than 5%. The largest deviations appear for Tomo machine checks. This can possibly be explained by the inadequate measurement setup which is optimized for the geometry of conventional linear accelerators.

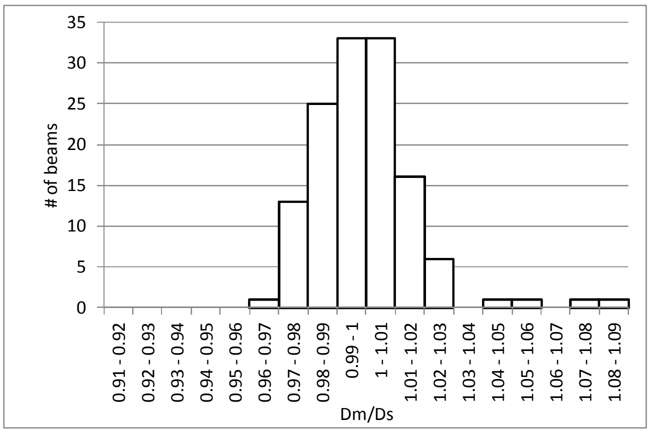


Figure 3: Histogram of D_m/D_s values for 28 institutions and 132 beams.

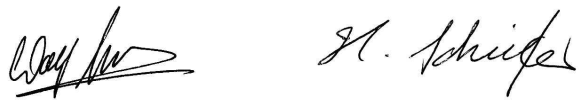
When two most deviating D_m/D_s values are excluded, the mean standard deviation is 1.5%. This is slightly larger than for earlier measurements in water: In 2009, the standard deviation amounted to 1.2%. It can be expected that with growing experience (and optimized measurement setup for Tomo machines), the same accuracy will be achieved as for measurements in water.

Discussion and Conclusion

The phantom setup introduced for photons in 2011 is dosimetrically equivalent to water. No conversion factor from phantom to water has therefore to be applied. It is recommended that future photon and electron dosimetry checks (as performed in 2010) are performed in the phantom setup.

The measured doses of 127 out of 131 checked beams (96.9%) coincide with the stated ones within 4% and fulfil therefore the dosimetric requirement. 96.2% of all D_m/D_s values are within the [0.97, 1.03] interval, 81.7% within the [0.98, 1.02], and 50.4% within the [0.99, 1.01] interval.

At the end, we thank all institutions for their pleasing co-operation.



W.W. Seelentag H. Schiefer

Summary of the AMP Meeting (Bern, February 10th, 2012)

With approximately 35 participants, the agenda of the AMP meeting on February 10th 2012 was obviously very attractive and the meeting took place at the University of Bern.

In the first part, we concentrated on the topic “second cancer incidence in radiotherapy”. Andreas Joosten (CHUV & IRA, Lausanne) and Roger Hälg (Triemli Hospital, Zurich) were presenting their investigations about this topic. It is out of the scope of this summary to provide details of their research results, but both speakers have already published or are going to publish their results in peer-reviewed papers. The audience appreciated their excellent presentations and we had an inspiring discussion on potential late effects of standard and modern techniques in radiation therapy.

Roger Hälg (left) and Andreas Joosten (right) presented their research work at the last AMP meeting.

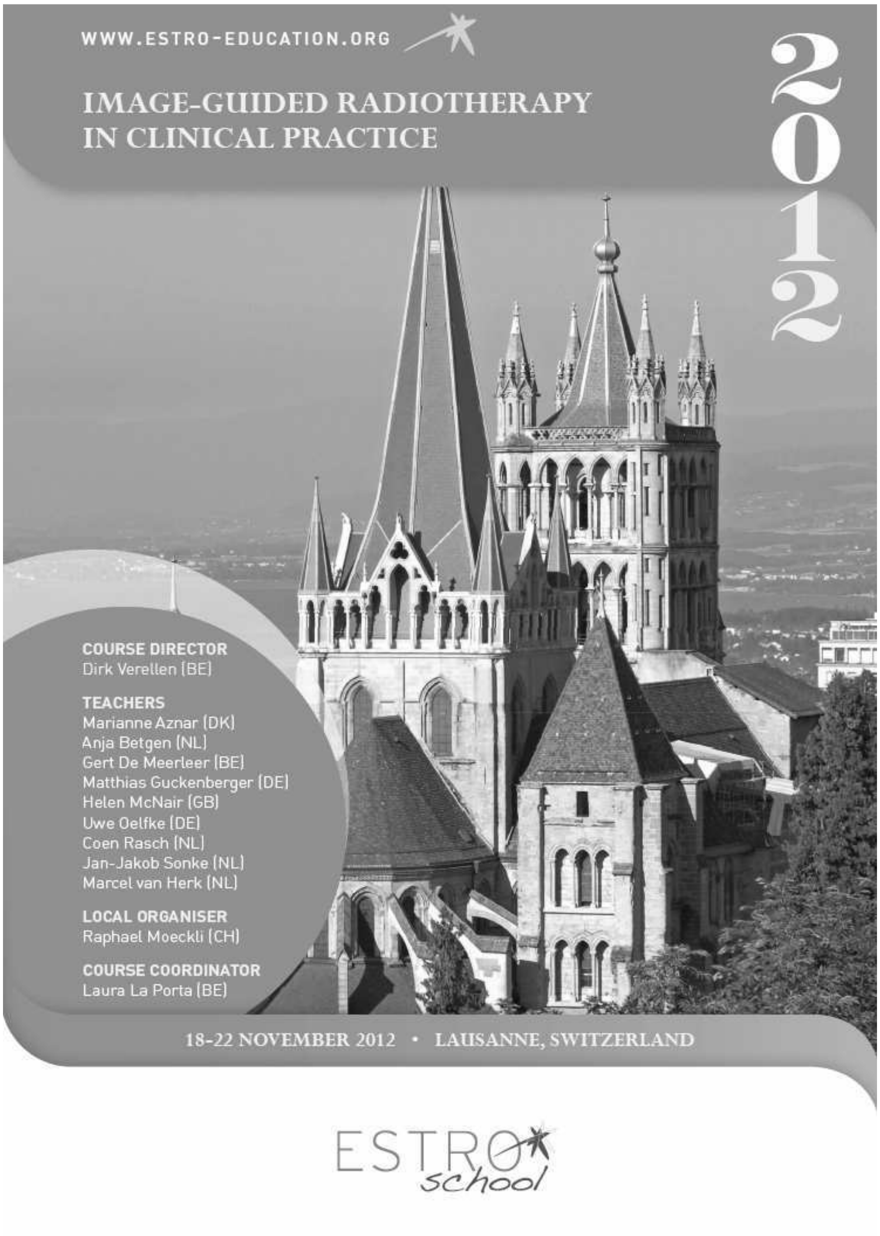
In the second part of the AMP meeting, we concentrated firstly on “uncertainties in basic dosimetry” and on “dosimetry for 10-100 kV photon beams”. Anton Steiner (Metas, Bern) gave a summary of the current issues to be discussed within SSRMP. It was said that the uncertainties of the reference laboratory for therapy dosimeters will be introduced in an annex of the new radiation protection ordinance. In addition, a special issue of the dosimetry codes of practice for 10-100 kV photon beams was discussed. Particularly, the problem of using plastic plates or foils for photons with energy higher than 50 kV was raised. In the following, we agreed on the need to establish/re-activate a working group dealing with these topics. This idea was supported by the fact that the corresponding recommendations by SSRMP are more than 10 years old and need to be re-evaluated.

Secondly, Hans Schiefer (KSSG, St. Gallen) gave an update on the Swiss TLD inter-comparison. Next to the results, Hans Schiefer announced that KSSG is not able to perform this service anymore. While the participants thanked KSSG, and especially Hans Schiefer, for providing this service over the last years, a short discussion took place on how to realize the TLD intercomparison in future. Peter Manser (Inselspital, Bern) said that he is evaluating together with Hans Schiefer whether it is possible to perform the TLD inter-comparison in future at Inselspital Bern. However, several issues need to be solved such as e.g. Cobalt-calibration and no final decision was taken. It is worth repeating here that any institute/person is welcome to take over this service, and if interested, they should contact Peter Manser or Hans Schiefer.

Eventually, short updates were given for several active working groups. Again, due to absence of several chairs of the working groups, the usefulness of the updates was limited. Nevertheless, also from the feedbacks after the AMP meeting, I can conclude that the meeting was necessary and the discussions were stimulating and useful. Many thanks for your attendance and your contributions!

Peter Manser, Chair of AMP

ESTRO IGRT course in Lausanne 18 -22 November 2012



COURSE AIM

- To cover both theoretical and practical aspects related to the clinical implementation of in-room imaging in radiotherapy.
- To review imaging techniques that can be applied in the workflow of conformal radiotherapy and understand how individual links in the chain of events will influence clinical outcome (from treatment prescription to preparation & planning, to patient set-up & verification and finally follow-up).
- To identify potential sources of errors in target delineation/ localisation and how IGRT can be of help, with special emphasis on conformal radiotherapy, intensity modulated radiotherapy and management of organ motion.
- To understand the concept "target delineation – target localisation" at each particular step in the treatment chain and identify appropriate techniques to increase both efficiency as well as efficacy.
- To offer an overview of available technologies and how to integrate these in clinical practice.
- To compare available technologies and help define applicability for particular use.
- To understand the functionality of the equipment and technology, and identify limitations of a particular method.
- To learn establishing an efficient image-guided work- flow through optimal integration of available technologies and understand the importance of teamwork and training.
- QA of IGRT systems.

Register online at WWW.ESTRO.ORG -> EDUCATION

CALENDAR 2012

17.-19.09. Molekulare Bildgebung, MoBi2012
D-Erlangen *www.mobi2012.de*

23.-26.09. Annual Meeting of the German Biophysical Society
D-Göttingen *www.biophysical-congress.de/*

23.-24.09. Accelerated Magnetic Resonance Imaging 3rd International Workshop
D-Freiburg *www.mr-imaging-freiburg.de/*

26.-29.09 Jahrestagung der DGMP
D-Jena *www.conventus.de/dgmp2012/*

10.-11.10. 4th Symposium on Novel Targeting Drugs and Radiotherapy
F-Toulouse *www.estro-events.org*

10.-12.10. International Symposium on Biomedical Engineering and Medical Physics
LV-Riga *www.bini.rtu.lv/isbemp/index.html*

15.-16.11 **Annual General Meeting**
Biel *www.sgsmp.ch*

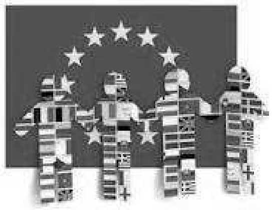
18.-22.11 **ESTRO Teaching Course**
Lausanne **Image-Guided Radiotherapy in Clinical Practice**
www.estro-education.org

29.11.-1.12. Medizinische Physik und Technik für Radioonkologen
D-Heidelberg *www.uni-heidelberg.de/wisswb/medtechnik/radioonkologie/*

And please, if you participate in any conference or meeting, think of writing a few lines or sending a picture for the rubric “recent meeting”.

THANK YOU!

Brussels gets ready to implement new radiation protection rules



A European Union directive looks set to impose new risk levels for ionizing radiation as part of an effort to lay down basic safety standards for protection against exposure.

The proposed measure consolidates five separate pieces of existing legislation into a single directive, while also updating the risk values to take account of recent research into the impact of radiation on different body tissues. Overall, the European Society of Radiology (ESR) Radiation Protection Subcommittee welcomes the proposal as a useful and needed measure, but there is some fear the changes will lead to more red tape due to, for example, the closer involvement of medical physicists in the process.

There is a demand for medical physicists to play a bigger role in the sector, becoming involved in consultations when hospitals buy new equipment, but Europe has a severe shortage of such specialists and this could lead to bottlenecks and delays.

The changes include a new limit on the dose for the lens of the eye to 20 mSv in a year. This is in line with the April 2011 recommendation from the International Commission on Radiological Protection (ICRP), slashing the dose limit in occupational exposure from 150 mSv in a year. It reflects ICRP research showing how the lens of the eye is a more radiation-sensitive tissue than previously thought, and risks becoming partly cloudy or totally opaque when overdosed with radiation.

Other measures include a limit on the equivalent dose for the skin at 500 mSv in a year (applying to the dose averaged over any area of one square cm regardless of the area exposed), and the limit on the equivalent dose for the hands, forearms, feet, and ankles at 500 mSv in a year.

ICRP says the directive "establishes the basic safety standards for the protection of the health of workers, general public, patients, and other individuals subject to medical exposure against the dangers arising from ionizing radiation."

The latest version of the proposal was published by the European Commission (EC) on 30 May, and still has to be approved by EU member state officials, but that is expected within the next few weeks.

The EC recognizes that while the use of ionizing radiation in CT scans and other advanced medical imaging tests brings tremendous benefits to the global population, too much radiation can damage cell DNA and lead to mutations that cause cancer. "In normal situations, doses are very low so that there is no clinically observable tissue effect, but there still is a possible late effect, cancer in particular," it notes.

Ionizing radiation in medicine has soared over the last 15 years, raising questions about whether the benefits of all these scans outweigh the potential risks, especially since many diagnostic imaging examinations are often unnecessary. A number of recent studies have linked increases in medical imaging to higher rates of radiation-induced cancers.

The proposed measure also simplifies European rules by replacing five directives with one piece of legislation. These five directives are: Basic Safety Standards, Directive 96/29/Euratom; Medical Exposures, Directive 97/43/Euratom; Public Information, Directive 89/618/Euratom; Outside Workers, Directive 90/641/Euratom; and High Activity Sources, Directive 03/122/Euratom

In addition, the commission says the new measure would fully cover natural radiation sources such as radon, and offer more challenging requirements for managing emergency exposure situations in light of last year's nuclear crisis in Japan.

Source: www.auntminnieeurope.com

Source: Bulletin of the OFSP 26/12 25 June 2012 p 446

http://www.bag.admin.ch/dokumentation/publikationen/01435/11505/12789/index.html?lang=fr **in French**
http://www.bag.admin.ch/dokumentation/publikationen/01435/11505/12789/index.html?lang=de **in German**

Radioprotection

Audits cliniques en Radiologie*: outil optimal dans l'intérêt du patient

Dans le cadre de la politique suisse de la santé, qui a pour but de constamment améliorer la qualité des soins, l'OFSP a étudié la situation actuelle en radiologie diagnostique, en médecine nucléaire ainsi qu'en radio-oncologie. L'augmentation de la dose moyenne reçue par la population suisse dans le domaine médical doit être maîtrisée. Les résultats de l'analyse de la situation effectuée avec les principales parties prenantes démontrent clairement que l'introduction d'audits cliniques permettrait à long terme de garantir une utilisation optimale des rayonnements ionisants pour les patients, et donc de minimiser la dose reçue.

La radiologie est un domaine médical profitant grandement des avancées technologiques. Que ce soit en radiologie diagnostique, en médecine nucléaire ou en radiothérapie, les installations actuelles permettent de visualiser le squelette ainsi que l'état ou l'activité d'organes de manière toujours plus précise. La plupart de ces appareils recourent néanmoins aux rayonnements ionisants, tels les scanners aux rayons X, qui comportent leur part de risques. En effet, une forte exposition aux rayonnements ionisants peut engendrer le développement de cancers. Ce n'est donc que lorsque les avantages d'un examen ou traitement radiologique contrebalancent les risques encourus, qu'il est justifié de l'effectuer.
En Suisse, la dose moyenne reçue par la population suisse due au diagnostic médical a augmenté de 20% en 10 ans, pour atteindre 1,2 mSv en 2008 [1], ce qui correspond par exemple à la dose reçue par un adulte pour 24 radiographies du thorax. Cette tendance s'observant également à l'étranger, l'Union européenne a introduit en 1997 déjà la notion d'audit clinique en radiologie [2], afin d'améliorer la qualité ainsi que l'issue des traitements ou examens. Ceux-ci consistent en des évaluations systématiques et continues de toutes les procédures radiologiques, ceci par rapport à des standards établis. De tels audits sont effectués par des experts indépendants, tels des médecins, des physiciens médicaux et des techniciens en radiologie médicale.
La Finlande fait figure de pionnier, puisqu'elle a déjà audité deux fois tous ses centres radiologiques. L'expérience finlandaise démontre que toutes les parties impliquées en profitent: le corps médical reçoit confirmation de ses pratiques radiologiques et peut améliorer ses points faibles; les patients sont assurés de la justification et de l'optimisation de leur examens et traitements; et finalement, la société en général obtient l'assurance d'une harmonisation des pratiques radiologiques au niveau national et profite d'un système de santé de très haute qualité n'engendrant aucun coût inutile, les examens étant justifiés et optimisés.
Afin de créer une situation semblable en Suisse, l'OFSP a analysé le système suisse avec la collaboration des principales parties prenantes (médecins de différentes disciplines, physiciens médicaux, radiopharmaciens, techniciens en radiologie médicale, hôpitaux, assureurs et autres). Plaçant le bien optimal du patient au centre de sa réflexion, 15 facteurs influents ont tout d'abord été recensés, tels une prescription justifiée des examens et traitements radiologiques, une utilisation des rayonnements ionisants axée sur l'optimisation de la dose, un savoir basé sur les faits *(evidence based knowledge)*, des prestataires de haute qualité, etc. Ensuite, chaque participant a déterminé de manière autonome les influences mutuelles des différents facteurs, et la moyenne de chaque incidence directe a été calculée. Le recours à un programme informatique a ensuite permis de simuler l'évolution du système, afin d'en tirer le maximum d'informations et de pouvoir prendre les bonnes décisions.
L'analyse du système révèle que la qualité et l'issue des pratiques radiologiques sont principalement améliorées par l'existence d'une bonne organisation d'audit, par l'utilisation de connaissances basées sur l'évidence ainsi que par une efficiente gestion de la qualité au sein des instituts radiologiques. Avec le temps, la simulation dévoile une situation dans laquelle l'application des rayonnements ionisants s'effectue de manière toujours plus optimisée quant à la dose reçue par les patients, et la justification des prescriptions radiologiques augmente. La sécurité des patients s'en trouve ainsi améliorée. Finalement, le système atteint un état dans lequel la situation est optimale pour le patient. La simulation dévoile que ceci perdure grâce à l'implémentation législative des audits cliniques. Ce résultat confirme donc la nécessité des audits cliniques pour le bien du patient, et justifie ainsi la poursuite du projet, qui avait été lancé en 2011 [3].
Durant les prochains mois, l'OFSP se concentrera sur la définition de la législation relative aux audits cliniques en radiologie, ceci en collaboration avec les principales parties prenantes. Plus tard, les pratiques de bon usage ainsi que les programmes d'audits seront déterminés, de même que les compétences que devront posséder les auditeurs, afin d'apporter une plus-value aux organisations auditées. ■

* Radiologie: radiologie diagnostique, médecine nucléaire et radiothérapie

Informations supplémentaires

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Littérature

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LE TEMPS

Santé Mardi26 juin 2012

Des audits pour réguler le recours au scanner

Par Olivier Dessibourg

La dose de rayonnements moyenne reçue par habitant pour les diagnostics a bondi de 20% en dix ans. L'OFSP veut auditer les principaux centres de radiologie du pays

Tout voir dans le corps. En 3D. Et dans les moindres détails. Pour diagnostiquer un cancer ou d'autres affections. C'est ce que permettent les outils d'imagerie médicale, tels les scanners (CT-Scan ou tomodensitométrie, en mots savants). Afin d'obtenir ces images, ces appareils exposent les organes à des rayonnements X. Au point parfois d'induire… des cancers (1 à 2% des cas, selon une étude parue dans le New England Journal of Medicine). Des cancers qui devront être repérés à l'aide des mêmes méthodes de radiologie, puis traités par radiothérapie… «C'est ce cercle vicieux que nous visons à briser, en introduisant des audits cliniques des centres de radiologie importants en Suisse», dit Carine Galli Marxer, de l'Office fédéral de la santé publique. Le projet est décrit dans le bulletin de l'office publié lundi.

LE TEMPS

Santé Jeudi28 juin 2012

La radio-oncologie, symbole des excès de l'ambulatoire hospitalier

Par Pierre-Emmanuel Buss Berne

Le développement de l'offre en radio-oncologie dans le canton de Vaud illustre les excès de l'ambulatoire hospitalier L'exemple vaudois souligne l'absence de régulation du marché. Pierre-Yves Maillard dénonce «une offre excessive»

Physics Paparazzi

Stefan Scheib snapped by Werner Roser

Your photos of colleagues welcome for this spot!

PERSONALIA

Edyta Fujak arbeitete vom August 2006 bis zum Dezember 2011 in der Radio-Onkologie am Kantonsspital Aarau. Spezialisiert hat sie sich auf das Megavoltage Cone Beam CT.
In der Zeit am KSA erlangte sie die Fachanerkennung in Medizinphysik. Nach der Geburt ihrer Tochter reduzierte sie ihr Arbeitspensum. Ende Dezember 2011 ist sie nun mit der Familie zurück in ihre Heimat Polen gegangen.

Babara Markert
An der Universität Erlangen-Nürnberg habe ich Diplom Physik studiert mit Schwerpunkt Physik in der Medizin. Im März 2011 habe ich das Studium durch Abgabe meiner Diplomarbeit beendet und bin seit Januar 2012 am Kantonspital Aarau im Bereich Strahlenschutz angestellt. Im Oktober werde ich mit dem MAS Studiengang an der ETH Zürich beginnen und strebe die SGSMP - Fachanerkennung als Medizinphysikerin an. Meine Hauptaufgabe liegt in der Umsetzung des Artikels 74, Absatz 7 der StSV.

Käthy Haller
Direkt nach Abschluss meines Physik-Studiums arbeitete ich 3.5 Jahre als Medizinphysikerin am PSI in der Protonentherapie. Auf Februar 2012 habe ich in die Radio-Onkologie am KSA gewechselt und bin nun gespannt auf all die neuen Erfahrungen und Herausforderungen in einem Routinebetrieb.
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