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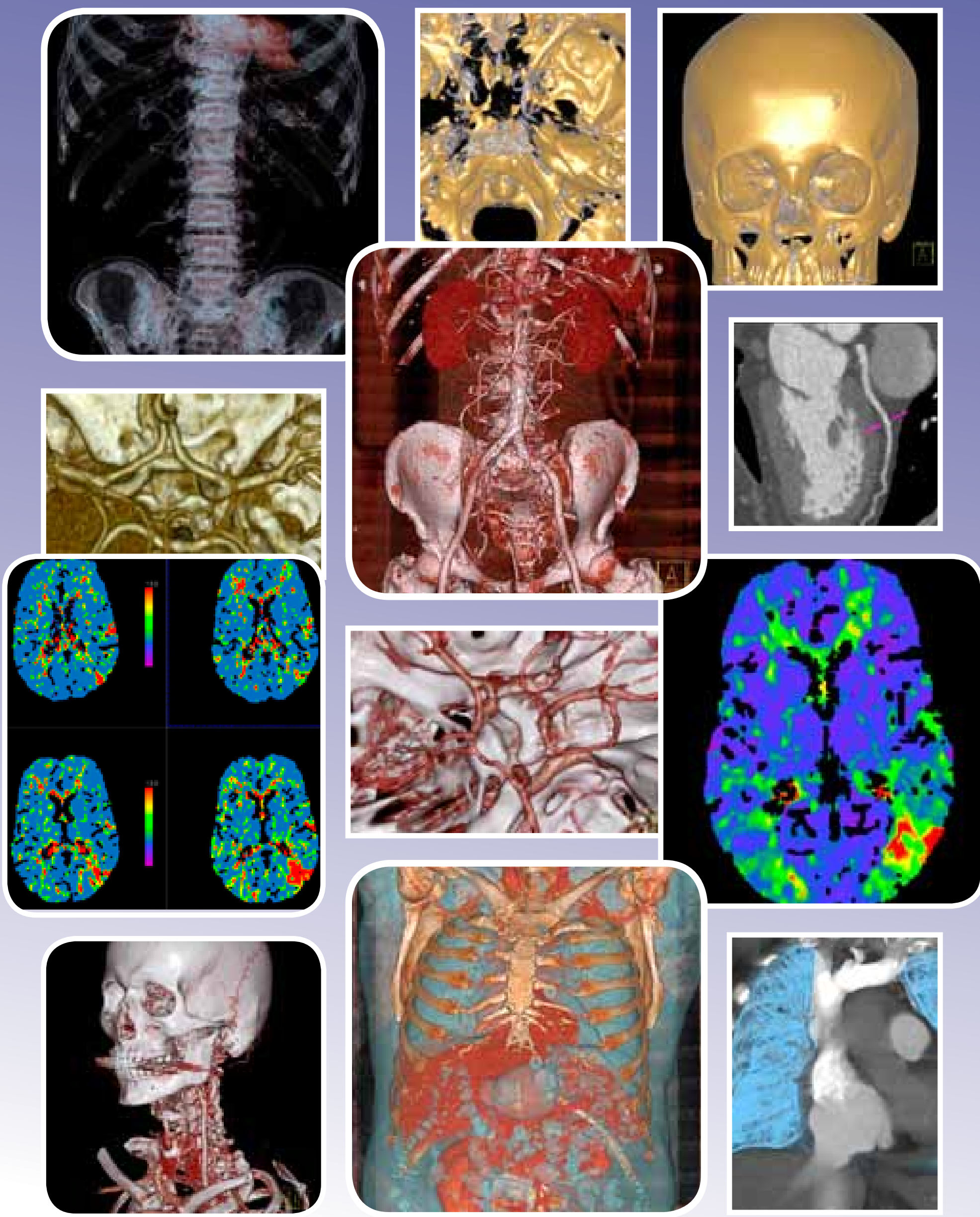

Journal of Clinical Radiography and Radiotherapy

Kliininen radiografiatiede (Journal of Clinical Radiography and Radiotherapy) is a journal published by the Society of Radiographers in Finland (Suomen Röntgenhoitajaliitto ry) and Radiography Research Association (Radiografian Tutkimusseura ry). The Journal publishes original articles related to radiography (clinical practice, training & education and radiography science) in Finnish, Swedish and English. The articles must be previously unpublished. The Journal also publishes reviews based on research, case studies related to developments in the field as well as short presentations of academic theses (Master´s, Licentiate and PhD theses). The Journal is particularly interested in articles that promote clinical radiography (diagnostics, isotopes and radiotherapy), related education and research as well as radiography science.

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Journal of Clinical Radiography and Radiotherapy – A small journal amongst many, but important for radiography science in Nordic countries

All of us know this sentence announced by Neil Armstrong in 21.7.1969 when he stepped to the surface of the moon: "That's one small step for [a] man, one giant leap for mankind". Something related to this must have been felt by the editorial board of the Journal of Clinical Radiography and Radiotherapy when they founded this Journal in autumn 2006 in the leadership of the first Editor in Chief, Sanna-Mari Sorppanen (nowadays Ahonen). The first issue of this Journal was published as a hard copy in autumn 2007. Journal of Clinical Radiography and Radiotherapy (Kliininen radiografiatiede) is a journal published by the Society of Radiographers in Finland (Suomen Röntgenhoitajaliitto ry) and Radiography Research Association (Radiografian Tutkimusseura ry). Since 2012 the Journal has also been published as pdf version.

One of the editorial board members asked me at the most recent editorial board meeting a very good question: How does the Journal profile amongst other scientific journals in the field of radiography? Does it have some specific profile or does it just add something similar to other journals in the field? The Journal publishes articles related to radiography (clinical practice, training & education and radiography science) in Finnish, Swedish and English. As Editor in Chief I think our profile does not differ by the substance compared to other scientific journals in the field of Radiography. This is because, especially in the Nordic countries we have so few scientific authors in the field that we are wise not exclude any good quality research in the field of radiography and radiotherapy including issues in nuclear medicine, quality, dosimetry etc…Also the amount of scientific journals in the field worldwide is limited compared to other health care fields. We rather find our profile in this Nordic dimension. We want to serve as a publishing channel for the Nordic scientific research, in Finnish and Swedish languages not forgetting that English language is the most common one in publishing scientific research. We also want to make visible Nordic research in the field but also welcome research articles and reviews from any country in the world to communicate advances in the field for Nordic and worldwide audiences.

We warmly welcome you as readers and contributors of our Journal. Please be free to visit Journal websites where you find the latest issues of the Journal and authors instructions http://www.suomenrontgenhoitajaliitto.fi/index.php?k=7482

Editor in Chief Eija Metsälä

What does extracurricular education in a rural setting give the radiography student?

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Abstract
Encouraging healthcare students to study in a rural area is seen as an innovative method of recruiting staff to areas of workforce shortage in Australia. This is also seen as a way of increasing access to quality healthcare. Providing a rural study option to radiography students provides a different experience to that on the main campus. A range of extracurricular activities are offered and although not compulsory most students take part. An Allied Health Camp, interprofessional learning modules and community projects are some such opportunities. Evaluation of the programme shows positive outcomes in terms of developing the students' knowledge of patient pathways and encouraging collaborative ways of working. Students also gain a unique set of skills useful to their future careers.

Introduction

University Departments of Rural Health were first set up in Australia in 1998. There are now 11 across the country, funded by the Australian Department of Health. The University Of Newcastle Department Of Rural Health (UoNDRH) opened in 2002. There are two sites based 3-4 hours away from the main campus, one in a coastal location and the other in a country town; both serve a wider rural population. The campuses are modern with an excellent range of facilities and have developed into thriving multidisciplinary student communities. Enabling students to spend part of their course in a rural area has been seen as an innovative way of attracting future staff to areas of workforce shortage (Critchley, DeWitt, Khan, and Liaw 2007). Radiography students can opt to spend their final (3rd) year of study at one of the sites, with fifteen places being offered in total. Students from Medicine, Nutrition and Dietetics and Physiotherapy courses are also able to take this opportunity. Other students may join for shorter placements. The programme is promoted to radiography students during the second year of the course. Radiography lecturers from the UoNDRH deliver a presentation at the main campus on the rural experience and study options offered. Expressions of interest for the full year programme, one semester, or a shorter clinical placement are taken. Good subsidised accommodation is provided and a public hospital with library facilities is nearby. Both centres employ full time radiography academics. Lectures are delivered by video conference from the main campus and tutorials are run locally. There are no radiography labs on site, but the students spend one day per week in one of the local public or private imaging centres. This ensures that there is no detriment to the academic or practical part of the programme.

Methods

This paper presents a case study of extracurricular activities experienced by radiography students in a rural setting, highlighting the outcome on preparation for future career. Quotes from radiography students have been included. A programme of activities runs throughout the year. These are non-compulsory; however students are encouraged to attend.

Results

• **Allied Health Camp:** This is held in the early weeks at a local outdoor education facility. It showcases the local area and introduces inter professional ways of working. Student feedback is overwhelmingly positive. They appreciate the opportunity to learn more about each other's roles and explore pre conceived ideas of what other professions do. There is a team based, competitive and a social element to the camp. It gives everyone the chance to mix with students and tutors from other disciplines in a relaxed setting. Some of the activities are social and sporting, building on interprofessional team interaction and collaboration. Others are problem based real life health care scenarios requiring the groups to work as a team and learn about each other's skills and roles. Team building skills develop and the expertise of each profession is recognised. Mutual respect and trust evolves and students feel a sense of belonging. Working competitively as a multidisciplinary team via activities and real life emergency scenarios is particularly popular.

Interprofessional Learning Modules (IPL) are held monthly and all students are invited to attend. Topics are chosen from a number of complex medical conditions that students are likely to encounter on their clinical placements. Whilst giving students the chance to learn more about a given condition, the main focus is on working together to solve a hypothetical patient scenario. These optional modules attract an average of 40 to 50 students at each. A study using Readiness for Interprofessional Learning Scale (RIPLS) (McFayden, Webster and McLaren, 2006) showed positive improvements in team work and positive

"The patient case on Saturday morning. It was good to see each disciplines input into the case and how we all need to work together" (MRS 2014)

Challenges of the Allied health Camp

"Firstly it is good to recognise other students and their area of study, as we will be working with them. Also it is good to understand all of the patient management for better patient care when they present at our department" (MRS 2013)

Trauma IPL – learning to work together

professional identity. Importantly, IPL modules did not affect negative professional identity and roles and responsibility. (Harries-Jones, Smith, Brown, Wakely and Burrows). Studies show that this should be taught at undergraduate level. (Thistlethwaite, 2012)

• **Cultural Training:** Students from major cities often have limited exposure or knowledge of the indigenous people of Australia. Cultural training takes place at induction and the students can volunteer for organised activities such as sporting events.

Educational opportunities are integrated into these events and are led by healthcare students. Introducing healthy living topics into these sessions gives students a sense of being able to make a difference by reaching the indigenous community and encouraging life choices that impact on health.

Community Projects: Students attend an introductory talk and have chance to be involved activities in conjunction with community partners. These range from interactive activities at local afterschool clubs, sponsored by the University, for children from a lower socio economic community. Innovative activities designed by the radiography students have been fun sessions such as "bone bingo", X-ray games to drawing bones structures by use of a skeleton. Teddy Bear Hospitals are run by the medical and radiography students. These "hospitals" are mobile and taken out to remote primary schools, playgroups and local fetes. A basic life like x-ray machine with lights an exposure button and mini lead aprons allow "real x-rays" to be produced by the children themselves.

'A lot of us haven't had much experience with children before, so it is really good to bridge the way into that. It's really good practise just being able to relate to the younger kids and learn how to talk to them and reach them and understand where they are coming from.' (MRS 2013)

X-ray Machine helps diagnose injured teddies

- **Careers Promotion:** Students take part and are given the chance to talk about their chosen profession at a careers day for local schools.

Discussion

In 2003, 24 radiography students undertook the programme. By 2013, 59 students participated. It is a popular option now attracting a full capacity of students. Participation in extracurricular activities allows the students to interact with other disciplines and community groups. This increases understanding of other roles and social determinants of health. Projects are successful in both single and multidisciplinary settings. Positive improvement in interprofessional team work and professional identity was shown. This is supported by research. In 2012/13, 100% of the UoNDRH group secured pre-registration posts. The extracurricular practical experience gives confidence. As rural and remote hospitals may not lend themselves to graduate posts, students may not be able to settle in the area immediately. However studies at UoNRDH are looking at longer term destinations of these students. Initial results suggest it positively affects their desire to work in a rural area. An unexpected outcome was that the skills set they gain from a rural placement appears to be an asset in their future career.

Conclusion

The UoNDRH programme gives students a unique set of experiences and skills, useful in their future career. As a popular alternative to studying on the main campus, students develop a more holistic view of healthcare and understanding of the roles of other professions. It develops clinical reasoning skills, knowledge of the patient pathway and how their role fits into the modern healthcare system. Being involved in the local community provides an insight into the social determinants of health. Poor diet, alcohol abuse, smoking and low utilisation of health care services are an unresolved issue within the indigenous communities (Gracey and King 2009). Students are encouraged to consider a rural location in their future career. The possibility of cross boundary working and rural generalist roles is being investigated as an answer to workforce shortages. The students gain an insight into what they may achieve in these settings in the future. Building workforce and improving access and health outcomes in rural areas is a constant challenge for the Australian government. (National Rural Health Alliance 2011)

UoNDRH radiography students prove to be good employable graduates. They stand out from the crowd when applying for jobs. Providing a two way cultural exchange gives the students an opportunity to interact with the community and in particular, children. This is of use in preparing both for a real life hospital situation. Personal past experience suggest that students have low exposure to paediatrics in a conventional programme. Each country has its own different geographical and health issues, but extra-curricular activities in radiography programmes has a beneficial effect in preparing students for practice in Australia.

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The survey conducted by Finnish Radiation and Nuclear Safety Authority in 2010 indicated that radiation protection training should be improved in Finland

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In health care, the use of radiation has increased significantly in recent years. The survey conducted by Finnish Radiation and Nuclear Safety Authority (STUK) indicated that radiation protection training among many health care professional groups was insufficient in Finland. Some educational institutions reported that they did not provide any radiation protection training even though they provide training for health care professionals.

Obligated by law

In Finland Radiation Act (592/1991) and Decree of the Ministry of Social Affairs and Health (423/2000) demands that a person who participates in the use of radiation needs to get a sufficient theoretical and practical training in the use of ionizing radiation. According to Radiation Act STUK is the authority that gives regulatory guides on radiation safety (ST-guides). In 2003 STUK established a Guide (ST 1.7) which sets out the objectives for the amount and content of the radiation protection training for the health care personnel. This guide was carried out in cooperation with educational institutions and ministry of education and culture. The Guide ST 1.7 was renewed in 2012.

According to Guide ST 1.7 basic training should include fundamentals of radiation physics (field 1) and biology (field 2), acts and regulations concerning the use of radiation (field 3), radiation safety at work (field 4) and medical use of radiation (field 5). Further education should emphasize more special features of radiation safety in different fields of medicine.

The aim is to reduce unnecessary exposure to radiation

In health care, the use of radiation has increased significantly in recent years. This has led to a number of international programs that aim to reduce radiation exposure in medicine. One way to reduce radiation exposure is to pay more attention to education. For example European Union (EU) has given a directive 97/43/Euratom that obligates members of EU to ensure that health care persons working among radiation have proper theoretical and practical training in radiation protection (European Commission 1997). This directive has been replaced by the directive 2013/59/Euratom that will be implemented into national legislation by February 2018. The article 18 in this new directive concerns education, information and training in the field of medical exposure (European Commission 2013). European Commission has also recently published MEDRAPET-report "Guidelines on Radiation Protection Education and Training of Medical Professionals in the European Union" (European Commission 2014). According to this report European Union should update its guidelines concerning the radiation protection education and training of health care professionals. This is mainly because training in radiation protection is widely recognised as one of the basic components of optimisation programmes. However the MEDRAPET survey revealed the need to develop learning objectives and harmonize these in EU.

STUK conducted a survey in 2010 to find out whether or not the radiation protection training given to the Finnish health care personnel corresponds to the objectives given in guide ST 1.7.

Execution of the study

The survey was conducted as questionnaire. The questionnaire was sent to universities, universities of applied sciences and a sample of upper secondary vocational education and training institutions that provide qualifications for health care professions who may be involved in the use of ionizing radiation. The educational institutions were also asked to provide STUK with their course descriptions regarding radiation protection training.

A separate survey was conducted among employers, in which employers were requested to assess the radiation protection knowledge and skills of newly graduated employees per professional group. The survey questionnaire was sent to a sample of radiation safety officers selected from the STUK Safety License Register.

Experts were employed in survey design and questionnaire form testing. The course descriptions received from educational institutions were also assessed by experts.

Results of the study

A total of 51 educational institutions responded to the survey conducted among educational institutions. 16 of these responses were from universities (response rate 94%), 14 from universities of applied sciences (response rate 67%) and 21 from upper secondary vocational education and training institutions (response rate 78%). The employee survey was sent to 258 radiation safety officers, and the response rate was 41%. Course descriptions were received from a total of 11 educational institutions and for some training programs only from one institution, so the results concerning these can only be regarded as indicative.

The results of the survey on amount of the education and training in radiation protection in basic and further studies of different health care professional groups in universities, universities of applied sciences and sample of upper secondary vocational education and training institutions (STUK 2011), compared to the goals set in Guide ST 1.7 (issued in 2003) are presented in Table I. The results of questionnaire sent to the employers are presented in table II.

Radiation protection skills of medical specialists are deficient

On the basis of the responses received, physicians and medical physicists receive training in all five subject areas of radiation protection determined in the Guide ST 1.7 at most of the universities. The total amount of radiology, clinical physiology and nuclear medicine specialist training reported by the respondents did not meet the target set in the Guide ST 1.7 in any educational institution. There were also considerable differences between universities.

Medical physicists received the most radiation protection training. It was reported in a total of 50% of university responses that specialists other than specialists in radiology, oncology, clinical physiology and nuclear medicine did not receive any radiation protection training at all.

Employer needs and the functionality of the training were not monitored enough from the radiation protection training perspective at universities. Access to study material was made easy at universities.

According to the expert assessments, the clarity of radiation protection training objectives was good or excellent only in medical physicist training programs. In addition experts felt that radiation protection training was taken well into consideration in medical physicist training programs. The biggest room for improvement in the clarity of radiation protection training objectives was found in the course descriptions of biochemistry departments and faculties of medicine.

According to the employer assessments, the level of radiation protection knowledge in all of the five radiation protection subject areas did not on average meet the target knowledge level set to be achieved through training according to the Guide ST 1.7 among any of the physicians' professional groups. On average, proficiency in working methods and equipment was sufficient or above average as regards their duties among dentists, radiologists, dental radiologists, oncologists and clinical physiology and nuclear medicine specialists. Basic knowledge of the use of radiation protection working methods and equipment was on average sufficient among physicians (Licentiate of Medicine), other physicians and other medical specialists, but these professionals still need some workplace training.

According to the employer assessments, the level of radiation protection knowledge among medical physicists in all of the five radiation protection subject areas on average met the target knowledge level set to be achieved through training according to the Guide ST 1.7. According to the assessments, proficiency in working methods and equipment concerning radiation protection was above average among medical physicists.

In some educational institutions nurses did not get any radiation protection training

At universities of applied sciences radiographer students received plenty of radiation protection training and they also received training in all five subject areas of radiation protection determined in the Guide ST 1.7. According to the responses, the total amount of radiation protection training clearly exceeded the target level of 3 study credits set in the Guide ST 1.7. The number of practical training hours was also large among radiographers, although there was a lot of variation between educational institutions. Some educational institutions reported that they did not provide any radiation protection training for nurses or paramedics.

Quality assurance of radiation protection training was more extensive and regular in those educational institutions that provided training towards a radiographer degree than in those that did not. Employer needs and the functioning of the training were not monitored enough from the radiation protection training perspective at universities of applied sciences. Universities of applied sciences had access to diverse assessment methods that ensure competence in radiation protection.

According to the expert assessments, the clarity of radiation protection training objectives was good or excellent only in paramedic training programs. According to the assessments, radiation protection training was taken well into consideration in radiographer and paramedic training programs.

The employers felt that the knowledge level of radiation protection among any of the groups of heath care professionals did not fully meet the target level set in the Guide ST 1.7. Proficiency in working methods and equipment concerning radiation protection was, according to the respondents, on average at a sufficient level as regards the duties of radiographers and dental hygienist.

Upper secondary vocational education and training institutions provided rather little radiation protection training. Some of them reported that they did not provide any radiation protection training for practical nurses. There was a lot of variation between educational institutions.

After the study Finnish Radiation and Nuclear Safety Authority renewed its guidance

The results of this study were analyzed by STUK together with Finnish National Board of Education and with Ministry of Education and Culture. This study provided a basis for discussion of development of radiation protection training of health care professionals and in 2012 STUK renewed the Guide ST 1.7 (STUK 2012). The survey results were used in the renewing of the guidance. For example a new chapter three was added into the new guide concerning the quality of education and the responsibilities of educational institutions. All education and training institutions that provide qualifications for health care professions who may be involved in the use of ionizing radiation should have one person who is responsible for radiation protection training. The duty of this person should be to ensure that radiation protection education and training is adequate and fulfils the requirements.

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Table 1. Amount of radiation protection training provided in basic and further training of different health care pofessional groups in universities, universities of applied sciences and a sample of upper secondary vocational education and training institutions compared to the goals determined in Guide ST 1.7.

Professional group	Means and ranges of amounts of radiation protection training in credit units and hours (1 credit unit = 27 hours)		Goals in study credits (in old units) and hours determined in Guide ST 1.7 (1 study credit = 40 hours)	
	credit units	hours	study credits	hours
Radiologits	1.2 (1.0-1.4)	32 (27-38)	2	80
Oncologist	1.9 (0.7-3.0)	76 (20-160)	2	80
Nuclear Physisian	1.1 (0.7-1.4)	30 (19-38)	2	80
Licentiate in Medicine, Lisentiate in Dentistry and Master of Applied Science	1.4 (0-2.7)	35 (0-73)	1.0-1.5	40-60
Other specialist physicians	1.6 (0-20)	40 (0-540)	1.5-2	60–80
Medical physicist	18.3 (3-41)	493 (81-1107)	2.5	100
Radiographer (universities of applied sciences)	19 (10-35)	513 (270-945)	3	120
Nurse and paramedic (universities of applied sciences)	0.8 (0-3.0)	22 (0-81)	1	40
Other health care professionals (e.g. Medical laboratory technologist working in isotope laboratory	2.8 (1.0-6.0)	76 (27-162)	1	40
Practical nurse	0.65 (0–2.5)	18 (0-68)	1	40
Other degrees in upper secondary vocational education and training institutions	0.68 (0.35-1.0)	18 (9.5-40)	1	40

Table 2. Employees´ opinions on radaiation protection knowledge and practical skills of recently graduated health care professionals.						
Professional group	Target level of radiation protection knowledge, field 1 Means of answers/ goal determined in Guide ST 1.7	Target level of radiation protection knowledge, field 2 Means of answers/ goal determined in Guide ST 1.7	Target level of radiation protection knowledge, field 3 Means of answers/ goal determined in Guide ST 1.7	Target level of radiation protection knowledge, field 4 Means of answers/ goal determined in Guide ST 1.7	Target level of radiation protection knowledge, field 5 Means of answers/ goal determined in Guide ST 1.7	Practical skills in radiation protection Means of answers
Radiologits	2/3	2/3	2/3	3/3	3/3	3
Onkologist	2/3	2/3	2/3	2/3	3/3	3
Nuclear Physisian	2/3	2/3	2/3	2/3	2/3	2
Licentiate in medicine, Licentiate in Dentistry and Master of Applied Science	1/2	1/2	1/2	2/2	1 or 2/2	1
Other specialist physicians	1/2	1/2 or 3	1/2	1/2 or 3	2/2	1
Medical physicist	3/3	3/3	3/3	3/3	3/3	3
Medicinal chemist	1/-	2/-	1/-	1/-	2/-	1
Engineer	2/3	2/2	3/3	3/3	2/3	1
Radiographer	2/2	2/2	2/3	2/3	2/3	2
Nurse	0/ 1 or 2	1/1 or 2	1/1 or 3	1/2 or 3	1/1 or 3	1
Paramedic	1/1 or 2	1/1 or 2	0/1 or 3	0/2 or 3	1/1 or 3	1
Dental Hygienist	1/1	1/1	1/1	1/2	1/1	1
Medical Laboratory Technlogist	1/2	1/2	1/3	1/3	1/3	1
Practical nurse	0/1	0/1	0/1	0/2	1/1	0
Dental assistant	1/1	1/1	1/1	1/2	1/1	1

Education about dental imaging quality assurance for different professional groups working in dental imaging

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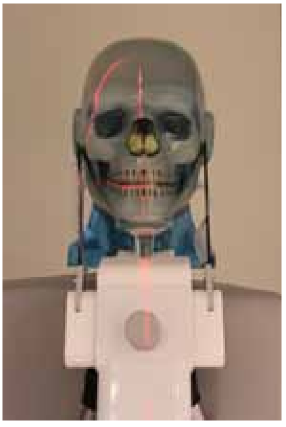
Dental imaging is one of the fastest growing areas of x-ray examinations. Doses incurred during dental examinations are in general relatively low but dental radiography still accounts for nearly one third of the total number of radiological examinations in the European Union. Globally 480 million dental examinations are performed yearly, and the effective dose of those is 11 000 man Sv (UNSCEAR 2008). Digital imaging gives opportunities to get the doses lower with the same image quality, but there is also a possibility for dose increase because it is quick and easy to take more x-rays. (Vandenberghe et al. 2010.) Therefore it requires special attention with regard to radiation protection. Article 7 of the 'Medical Exposures Directive' states, that dental practitioners must have adequate theoretical and practical training for the purpose of radiological practices, as well as relevant competence in radiation protection. Article 7 also requires continuing education and training after qualification. (van der Stelt 1995; UNSCEAR 2001; European Commission 2004) Also National radiation protection authorities have Regulatory Guides which dental clinics and other health care facilities practicing dental radiography have to obey. In Finland these Regulatory Guides are about the use and regulatory control of dental x-ray installations (ST 3.1), Radiation protection training in health care (ST 1.7) and Qualifications of persons working in radiation user's organization, and radiation protection training required for competence (ST 1.8) by Radiation and Nuclear Safety Authority (STUK).

Dental imaging and quality assurance education in Nordic countries varies a lot regarding what is provided for health care staff and professional groups, by quality, content and quantity of the education. In 2011 a Nordic project was started to develop some uniform education especially in dental imaging quality assurance for health care professionals having either Bachelor or Masters educational level. The project has



Kuva: Minna Väänänen

been financed by Norwegian Centre for Cooperation in Education (SIU) and by organizations taking part the project. The project produced web based educational packages totaling 15 ECTS for Bachelor level consisting of modules about technical basics of dental imaging, intraoral, panoramic and CBCT imaging as well as patient dose assessment. Masters level modules focus on image quality and metrics (3 ECTS), managing patient dose and image quality (5 ECTS) and elements of clinical audits (5 ECTS). Starting from autumn 2014 this education will be available via the institutions taking part in the project. So we warmly welcome you to grow your competence in dental imaging quality assurance with us!

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Radiography Research Association in Finland

Metsälä Eija[1], **Henner Anja**[2].

[1] Publicist of the Radiography Research Association in Finland
[2] President of the Radiography Research Association in Finland

Radiography Research Association in Finland (in Finnish Radiografian tutkimusseura) was founded at a meeting on 30.3.1996 where 15 radiographers signed the establishing document. Year 2014 is the association's 19th year in action. The purpose of the association is to promote and support scientific research in the field of radiography and it works in co-operation with the Finnish Society of Radiographers and Nordic Society for Research and Evidence-based radiography.

Any person or organization accepting the rules of the association can become a full member. One can also join the association as supporting member. The association has at the moment about 70 personal members. Official language of the association is Finnish.

The association organizes and participates in scientific education in the field of radiography, acts as a publisher and informant in the field of radiography, makes incentives and prepares statements associated to radiography and contacts and co-operates with the international societies in the field of radiography.

One of the association's main actions has been the Science day (Tiedepäivä, On World's Radiography Day). It comprise of presentations of newest (especially Finnish studies) in the field of radiography. Also other famous and interesting Finnish and international lecturers have been heard during these days as well as workshops about hot topics of the year. Actors in the field of radiography may also ask for board members as lectures for different types of happenings about the topics associated to radiography from the society. Most of the board members speak fluent English.

The association has websites open for all http://www.radiografiantutkimusseura.org/ comprising also of closed membership sites. It publishes Journal of Clinical Radiography and Radiotherapy (this journal) in co-operation with the Finnish Society of Radiographers.

Other Board members in 2014 are Aino-Liisa Jussila (wise-president), Pirjo Leppäsaari (treasurer), Riitta Oksanen and Mervi Siekkinen

Eija Metsälä

Join the Nordic society for research and evidence-based radiography – Call for membership now open!

Aim: The Nordic society for research and evidence-based radiography is a society of radiography organizations and radiographers interested in developing evidence-based radiography in Denmark, Finland, Iceland, Norway and Sweden. The Society's home is registered in Helsinki Finland.

The purpose of the society is to develop evidence-based radiography. The society collects and allocates its funds for this purpose. The aims are to empower radiographers, establish and realize especially Nordic research and development projects, organize and support education, and disseminate knowledge in the field of evidence-based radiography

Membership: The society consists of organizational members. As an exception is founding members that are private members. Members may be institutions educating radiographers, health care organizations or units or national societies of radiographers. Private members like radiographers, other health care professionals or educators working in the field of radiography and radiography students can join the society as supporting members.

Benefits for organization's – full members: Taking part and voting in the society's general annual meetings. Each organization having full membership has one vote. In general annual meetings all organizations members have the right to speak and be present as well as joining national teams that work towards the aims of the society. They also receive web-based newsletter two times a year, informing about the latest actions of the society and other Scandinavian actions in the field of radiography. Representatives of the organizations may join national teams and have an opportunity to be selected as board members. Full membership fee is 100 e/year.

Benefits for Personal supporting members: Taking part the society's annual meetings. Work towards the aims of the society in the national teams of the society. Receivie web-based newsletter two times a year informing about the latest actions of the society and other Scandinavian actions in the field of radiography. Membership fee for supporting members is 20e/year.

Additional information from the society's websites http://www.suomenrontgenhoitajaliitto.fi/index.php?k=7555

Contact information

paivi.wood@suomenrontgenhoitajaliitto.fi Treasurer of the Society
eija.metsala@metropolia.fi President of the Society

Instructions for Authors

All manuscripts and reviews intended for publication as original articles are subjected to peer review. At this point, the names of authors are not revealed to reviewers and vice versa.
The maximum length of articles is about 30,000 characters with spaces (including text, abstract, tables, figures and list of references). The maximum length of thesis presentations is 3,500 characters. In the case of articles, the number of characters in tables and figures is evaluated so that a table taking up half a page is calculated to contain 2,250 characters. The text is written on A4-sized sheets using double spacing, with a 3 cm margin on the left. Words are not divided. Division into paragraphs must be clear. Page numbers are given in the upper right-hand corner (not on title page).

a) Structure of the manuscript (excluding presentation of academic theses; see b):

The manuscript must contain the following:

1. **Title page**, which contains the title of the manuscript, first and last names of authors, their academic degree in Finnish and English, position at work, place of work and e-mail address. In addition, the name, address, e-mail address and phone number of a contact person must be given.
2. **The abstract** is written in the same language as the article. The length of the abstract is about 1,250 characters. It states the key contents of the article (in the case of research reports, aim/purpose of the study, methods, results and conclusions). In connection with the abstract, 3-5 key words are given for indexing. The names of the authors are not mentioned.
3. **Abstract in English**, which must be a direct translation of the abstract in the original language (including keywords). The authors are responsible for the proofreading of the English version. The names of the authors are not mentioned.
4. **Text pages,** in which the structure of the text follows general guidelines concerning the structure of scientific articles (with modification depending on the nature of the article). An article based on a research report must include the following: introduction to the subject, theoretical background or literature review, aim/purpose of the study & research problems, methods (target group, data collection and analysis), key results and discussion (conclusions, reliability of the study and ethical considerations as well as significance of the study for radiography). Inserted titles should be short and clear. No more than three title levels should be used. Main titles are written in uppercase, second-level titles in lower case and third-level titles in italicised lower case. In reviews and case reports on development projects, the structure described above is modified as appropriate.
5. **References** to literature in the text are indicated by the last name of the author and year of publication in parentheses (Virtanen 2007). If there are two authors, the last names of both are given (Virtanen & Lahtinen 2007). If there are more than two authors, the last name of the first and 'et al.´ is used (Virtanen et al. 2007). In the case of organisations, name and year of publication is given (Radiation and Nuclear Safety Authority 2007). When several references are given, they are arranged so that that the oldest come first and the newest last; if the year of publication is the same, the references are given in alphabetical order.
6. **Tables and figures** are given on separate pages each, numbered and with titles (title of table comes above the table, title of figure below the figure). The title text must describe what the table or figure represents. Tables and figures are numbered using running numbers that are used in the text to refer to them.
7. **The list of references** is entitled "References", and it must include all sources mentioned in the text, but no others. They are listed in the list of references in alphabetical order as follows:

Books:

Carlton R, Adler A. 1996. Principles of radiographic imaging. 2nd edition. Delmar Publishers, London.
Standertskjöld-Nordenstam C-G, Kormano M, Laasonen EM, Soimakallio S, Suramo I. 1998. Kliininen radiologia. Kustannus Oy Duodecim, Jyväskylä.

Article in a book:

Korhola O. 2005. Röntgendiagnostiikan kehitys. In: Radiologia Suomessa. Historiikki vuoteen 2005. WSOY, Jyväskylä, 16-21.
Virkkunen P, Salonen O. 1999. Kuvantamismenetelmät. In: Joensuu H, Roberts PJ, Teppo L. (eds.) Syöpätaudit. 2. edition Kustannus Oy Duodecim, Vammala, 98-109.

Journal article:

Decker S, Iphofen R. 2005. Developing the profession of radiography: Making use of oral history. Radiography 11(4), 262-271.

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European guidelines on quality criteria for computed tomography, http://www.drs.dk/guidelines/ct/quality/ (5 Jan 2007)

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Säteilyturvakeskus. 2005. Lasten röntgentutkimusohjeisto. STUK tiedottaa 1/2005.
Sosiaali- ja terveysministeriö. 2006. Terveydenhuollon valtakunnallisen tietojärjestelmäarkkitehtuurin periaatteet. Sosiaali- ja terveysministeriön selvityksiä 2006:8. Sosiaali- ja terveysministeriö, Helsinki.

8. Thanks (primarily to those financing the study) come at the end of the article, before the reference list.

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