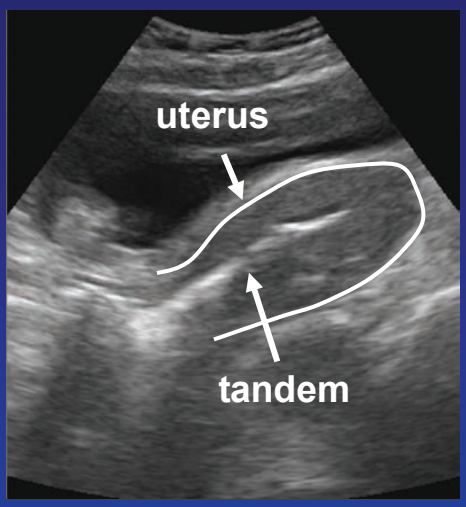
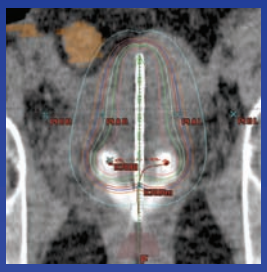
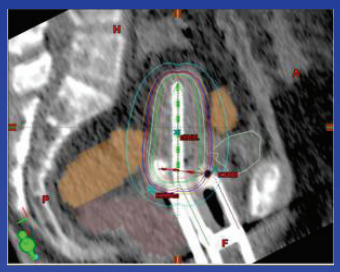
InterACTIONS

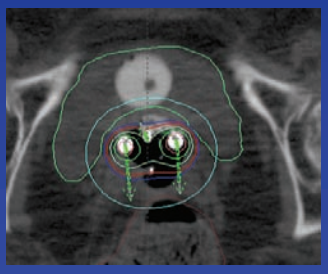
CANADIAN MEDICAL PHYSICS NEWSLETTER
Le BULLETIN CANADIEN de PHYSIQUE MÉDICALE

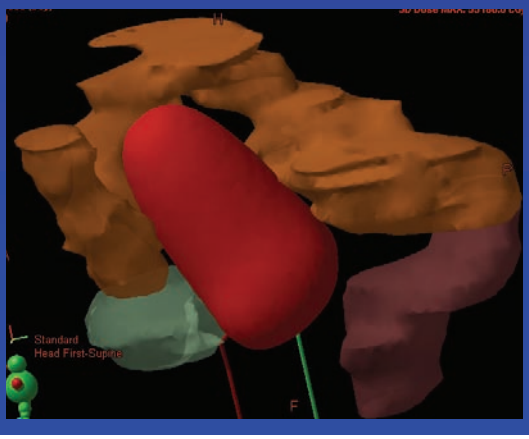
Multi-modality Image-Guidance for Efficient Implementation of HDR Brachytherapy for Cervix Cancer











PUBLICATIONS MAIL AGREEMENT
NO. 40049361

RETURN UNDELIVERABLE
CANADIAN ADDRESSES TO:
COMP/CCPM Office
PO Box 72024
Kanato North RPO
OTTAWA, ON K2K 2P4
CANADA

COMP CCPM

A publication of the Canadian Organization of Medical Physicists and the Canadian College of Physicists in Medicine

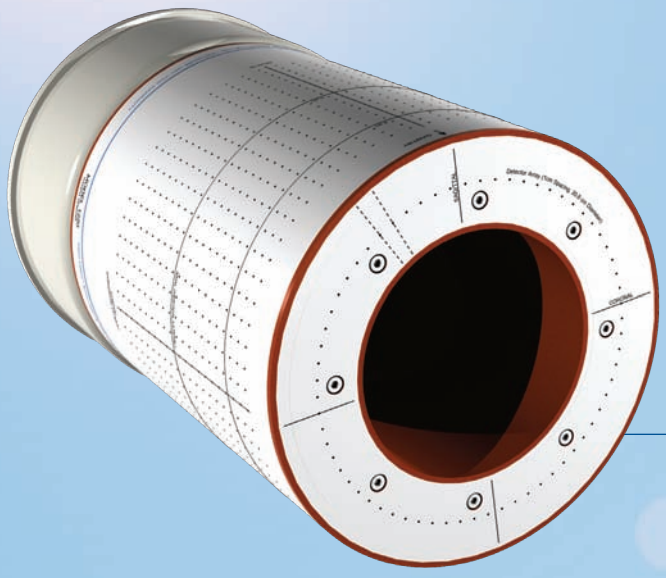
http://www.medphys.ca

ISSN 1488-6839

CANADIAN COLLEGE OF PHYSICISTS IN MEDICINE
LE COLLÈGE CANADIEN DES PHYSICIENS EN MÉDECINE

55 (3) juillet/July 2009

SUN NUCLEAR corporation



ArcCHECK™

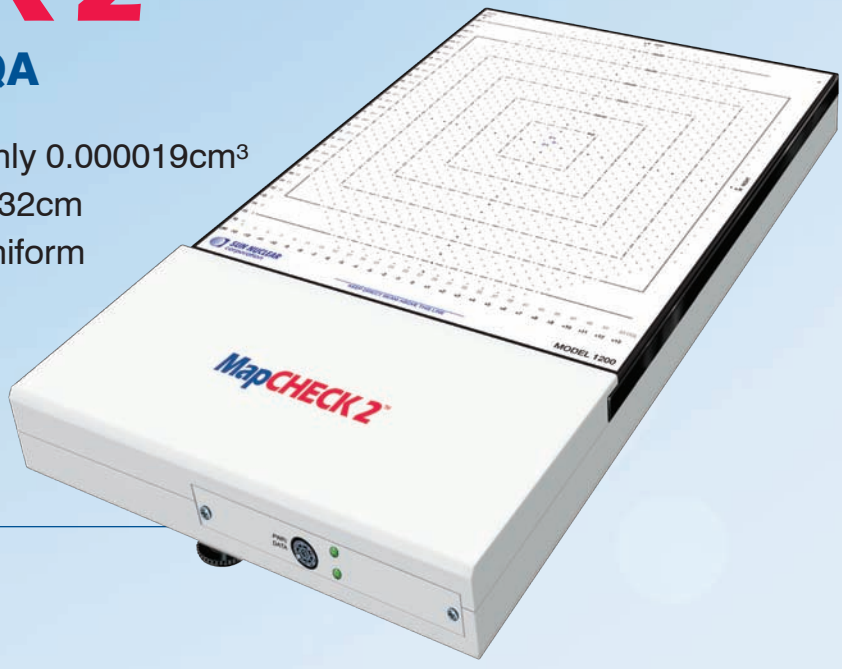
4D Isotropic Arc Delivery QA

- 1386 detectors on a helical grid (HeliGrid™)
- Cylindrical detector geometry
- Composite and beam by beam analysis
- Lightweight (14kg) and easy to setup
- 50ms update frequency - pulse synchronized

MapCHECK 2™

Raising the Bar in IMRT QA

- 1527 detectors with a volume of only 0.000019cm^3
- Largest available field size of 26 x 32cm
- Highest density array with 7mm uniform spacing
- Perform absolute dosimetry with no warm-up time
- 50ms update frequency - pulse synchronized



Official Distributor

CSP Medical
800-265-3460
sales@cspmedical.com
www.cspmedical.com

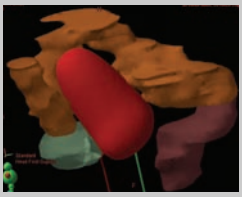
Sun

1220A022709

COMP OCPM
CANADIAN COLLEGE OF PHYSICISTS IN MEDICINE
LE COLLEGE CANADIEN DES PHYSICIENS EN MÉDECINE

InterACTIONS

Volume 55, Number 3– julliet/July 2009



Cover Image

Although image-based guidance and treatment planning is extensively used in prostate brachytherapy (BT), imaging in cervical BT procedures is nascent. Image guidance can provide powerful tools to navigate tandem insertions and allow 3D-treatment planning to spare organs at risk (OAR). These are important features since the proper positioning of intracavitary applicators is the most important factor in improving local control and radiation-induced damage to proximal OAR is the primary cause of early complications.

With this in mind, we implemented our HDR-BT program for cervix treatment incorporating tomographic image-guidance. Real-time verification of tandem placement was achieved via intra-operative US guidance. 3D-CT planning was used for conformal avoidance of OAR. Although CT does not provide a target for planning, it can identify OAR and define dose distributions in 3D. This feature allows simultaneously the expansion of isodose volumes based on clinical assessment of disease and determination of instances where dose shapes should be altered to reduce the risk of complications. Using US we directly evaluated implant quality at the time of insertion reducing our perforation rate from 10% to 0%, influencing our choice of applicators in 50% of cases, and reducing our average insertion time by 8 minutes. We have achieved similar OAR doses to groups using MRI-based planning, demonstrating that OAR avoidance can be effectively realized using CT.

A combination of imaging techniques can promote a more accurate and efficient workflow and enhance HDR cervix BT procedures as a whole. The implementation of image-guidance can be done without lengthening procedure time and with equipment readily available in most RT departments.

Images provided by Dr. Deidre Batchelar from the Odette Cancer Centre, Toronto ON

COMP EXECUTIVE

Chair:
Jason Schella, M.Sc., FCCPM
Nova Scotia Cancer Centre
5820 University Avenue
Halifax, NS, B3H 1V7
Tel: (902) 473-6011
Fax: (902) 473-6120
Jason.schella@cdha.nshealth.ca

Past Chair:
Stephen Pistorius, Ph.D.
CancerCare Manitoba
675 McDermot Avenue
Winnipeg, MB, R3E 0V9
Tel: (204) 787-4134
Fax: (204) 775-1684
stephen.pistorius@cancercare.mb.ca

Chair Elect:
Peter McGhee, PhD, FCCPM
Thunder Bay Regional HS Centre
Medical Physics Dept.
980 Oliver Road
Thuder Bay, ON, P7B 6V4
Tel: (807) 684-7325
mcghee@tbh.net

Secretary:
Patrick Rapley Ph.D., FCCPM
Medical Physics Program,
Thunder Bay Regional Health Sciences
980 Oliver Road
Thunder Bay, ON, P7B 6V4
Tel: (807) 684-7327
Fax: (807) 684-5801
rapleyp@tbh.net

Treasurer:
William Ziegler, PhD
Allan Blair Cancer Centre
Physics Services Dept.
4101 Dewdney Avenue
Regina, SK, S4T7T1
Tel: (306) 766-2329
bill.ziegler@saskcancer.ca

Councillor for Communications:
Michelle Cottreau, M.Sc.
Queen Elizabeth Hospital
60 Riverside Dr. Box 6600
Charlottetown, PE, C1A 8T5
Tel: (902) 894-0203
Fax: (902) 894-2276
mjcottreau@ihis.org

Councillor for Professional Affairs:
Joseph E. Hayward, Ph.D., MCCPM
Dept. of Medical Physics,
Juravinski Cancer Centre,
699 Concession Street
Hamilton, ON, L8V-5C2
Tel: (905) 387-9711 Ext: 67040
Fax: (905) 575-6330
Joe.Hayward@jcc.hcc.on.ca

CCPM BOARD

President:
Dick Drost, Ph.D., FCCPM
Nuclear Medicine Department
St. Joeseph's Health Care London
268 Grosvenor Street
London, ON, N6A 4V2
Tel: (519) 646-6100 x64141
FAX: (519) 646-6135
drost@lri.sjhc.london.on.ca

Vice-President:
David Wilkins, Ph.D., FCCPM
The Ottawa Hospital
Box 927, 501 Smyth Road
Ottawa, ON, K1H 8L6
Tel: (613) 737-7700 x70010
FAX: (613) 247-3507
dawilkins@ottawahospital.on.ca

Registrar:
Wayne Beckham, Ph.D., FCCPM
Vancouver Island Cancer Centre
2410 Lee Street
Victoria, BC, V8R 6V5
Tel. (250) 370-8225
FAX: (250) 370-8697
wbeckham@bccancer.bc.ca

Chief Examiner:
Michael Evans, M.Sc., FCCPM
McGill University Health Centre
1650 avenue Cedar
Montréal, QC, H3G 1A4
Tel. (514) 934-8052
FAX: (514) 934-8229
mevans@medphys.mcgill.ca

Deputy Chief Examiner:
Robert Corns, Ph.D., FCCPM
BC Cancer Agency, Fraser Valley Centre
Medical Physics
13750-96 Avenue
Surrey, BC, V3V 1Z2
Tel: (604) 930-4055 x4558
Fax: (604) 930-4042
rcorns@bccancer.bc.ca

Secretary-Treasurer:
Sherry Connors., M.Sc., FCCPM
Dept. Medical Physics
Cross Cancer Institute
11560 University Ave
Edmonton, AB, T6G 1Z2
Tel: (780) 432-8775
Fax: (780)-432-8615
sconnors@ualberta.ca

General Board Members:
John Rowlands, Ph.D., FCCPM
Darcy Mason, M.Sc., FCCPM

COMP/CCPM Office

COMP Secretariat
COMP/CCPM Office
P.O. Box 72024
Kanata North RPO
Ottawa, ON, K2K 2P4
Canada
Telephone:(613) 599-3491
Facsimile: (613) 599-1949
E-mail: admin@medphys.ca
Website: www.medphys.ca

The Canadian Medical Physics Newsletter, which is a publication of the Canadian Organization of Medical Physicists (COMP) and the Canadian College of Physicists in Medicine (CCPM) is published four times per year on 1 Jan., 1 April, 1 July, and 1 Oct. The deadline for submissions is one month before the publication date. Enquiries, story ideas, images, and article submissions can be made to:

Parminder S. Basran, Ph.D., MCCPM
Sunnybrook Health Sciences Centre
2075 Bayview Avenue, TG-217
Toronto, ON, M4N 3M5
Email: parminder.basran@sunnybrook.ca
Phone: (416) 480-6100 Ext: 1087
Fax: (416) 480-6801

Members of the Editorial Board include:

Boyd McCurdy:
boyd.mccurdy@cancercare.mb.ca

Michelle Cottreau: mjcottreau@ihis.org

Please submit stories in Publisher 98, Word 6.0, Word 97, or ASCII text format. Hardcopy submissions will be scanned to generate an electronic document for inclusion in the Newsletter. Images in Tiff format at 300 dpi resolution are preferred.

ADVERTISING (both corporate and job) enquiries can be made to:
COMP/CCPM Office
P.O. Box 72024
Kanata North RPO
Ottawa, ON, K2K 2P4
Canada
Telephone:(613) 599-3491
Facsimile: (613) 599-1949
E-mail: admin@medphys.ca
Website: www.medphys.ca

Corporate Advertising

	1/2 page	1 page	Addn. pages
Member Announcement		$120	$120
Corporate Member	$180	$240	$120
Non Profit Organisation	$270	$360	$150
Corporate Non-Member	$360	$480	$240
Color	Add $480 (when available)		

Job Advertising Options

OPTION 1 ($240): Job posting on COMP/CCPM website only (updated monthly)
OPTION 2 ($360): Job posting on COMP/CCPM website AND in InterACTIONS! (single page)
OPTION 3 ($400): Job posting is immediately e-mailed to COMP/CCPM members (no website or InterACTIONS! posting)

Message from the CCPM President:

This is my last editorial. My term as CCPM President ends at this year's AGM in Victoria and I officially retired from my hospital medical physics position a few weeks ago.

I want to thank both the board members and all the volunteers that help with the membership and fellowship exams each year.

The required number of examiners is the same as the number of candidates taking the membership oral exam and greater for the fellowship exam.

This means ~ 28 volunteer examiners in addition to the 8 board members that give up their weekend with no financial and minimal academic benefit.

One volunteer, the CCPM chief examiner, almost has a second job on top of his / her daytime job organizing all the exam logistics during the examination period.

Again my thanks go out to all the volunteers and especially Michael Evans, our chief examiner.

My wife and I have been very fortunate in that we have been able to retire earlier than normal to start fulfilling our dream of exploring North America full time in our trailer for several years.

As you're reading this we should have reached our first destination, the Maritimes.

Although I've retired from medical physics, this doesn't mean there is no physics left to learn when pulling a trailer with a car.

As an example, the typical hitch weight of a large trailer, the force pushing down where it connects to the car, is 900 lbs.

Nine hundred pounds pushing down at the edge of your trunk severely degrades both the rear springs and the road handling.

To correct this, an equalizing hitch is used, an adjustable mechanical arm that creates a torque via the car hitch around the rear car axle transferring enough of the trailer hitch weight to the front wheels thereby equalizing the trailer hitch weight between the front and rear wheels.

Dr. Dick Drost,
CCPM President

I naively assumed that the 900 lb hitch weight was "equalized" into a 450 lb force on the front wheels and a 450 lb force on the rear wheels.

However, the correct answer is 300 lbs and 300 lbs.

Where did the other 300 lbs go?

It's been a great trip.

Thank you for all your support.

Message from the COMP Chair:

It is once again time to say goodbye to one of our board members. **Michelle Cottreau's** term as Councilor of Communications is finished after this year's AGM in Victoria. Under Michelle's leadership the Communications committee has done a fantastic job with the revamping of both the COMP and CCPM websites and has carried out her duties exceedingly well. Our many thanks to Michelle for all of her hard work.

In addition, our editor for InterACTIONS, **Parminder Basran**, is editing his last issue (July). Parminder has done a great job during his term. This can sometimes be a thankless job (especially when trying to get those of us who must submit articles regularly), and so I would like to publicly thank him for all he has done. **Idris Elbakri** will be stepping into Parminder's position. I'm sure that he will find this a rewarding experience.

Preparations for the 2009 Annual Scientific Meeting in Victoria are nearing completion...

Preparations for the 2009 Annual Scientific Meeting in Victoria, BC are nearing completion. The Local Arrangements Committee (LAC) has done a superb job and it looks to be a well attended meeting. The response to this year's call for abstracts has exceeded our expectations and the quality of submissions is top notch.

This year, we will be adding a session for the non-radiation therapy physicists in our membership. The topic has yet to be chosen but our hope is that this will become a valuable part of the ASM. As always, please provide us with any feedback or suggestions you might have to help us improve this event. I look forward to seeing you there.

This year, we will be adding a session for the non-radiation therapy physcists in our membership...

Here is a brief update on a few of our strategic plan items that are underway:

Conduct a Feasibility Study re: Running a Winter Program

The inaugural **"Winter" School** is to take place January 2010 in Banff, AB. The advertisement with all the particulars will be forthcoming. This is designed to be a high quality educational offering and will include top notch speakers. Please help us to make this a success.

The inaugural "Winter" School is to take place January 2010 in Banff, AB.

Establish relations with adjacent communities

COMP and many other Canadian organizations are beginning to work together in order to ensure proper representation in the various initiatives underway. Organizations such as the Canadian Association of Radiologists, the Canadian Association of Nuclear Medicine, and the Canadian Association of Medical Radiation Technologists, have contacted our office looking for volunteers from our membership to participate on working groups and committees where it is important to have medical physics input. Volunteers would act as representatives of COMP and report to the board. This is an important step in aligning the activities of these organizations. The overall goal is to provide guidance and direction that will improve the overall quality of diagnostic and therapeutic programs in Canada. If you or someone you know is interested in participating, please look for these opportunities in upcoming e-mail announcements or on the website.

I would like to thank all those who take the time to volunteer on the various committees as well as those who are volunteering in other ways (reviewing abstract submissions, LAC, etc…). COMP would not be able to function without their help.

If you wish to volunteer with COMP in some way, feel free to contact me at jason.schella@cdha.nshealth.ca or Nancy Barrett at nancy@medphys.ca. There is always room for you.

Mr. Jason Schella
COMP President

Organizations such as the Canadian Association of Radiologists, the Canadian Association of Nuclear Medicine, and the Canadian Association of Medical Radiation Technologists, have contacted our office looking for volunteers from our membership to participate on working groups and committees

If you have an article that you would like to share with other COMP members, publishing through *InterACTIONS* is a great way to do it.

I wish you all the best.

Message from the Executive Director of COMP/CCPM:

Looking Forward to Victoria

As this issue of InterACTIONS arrives on your desk, the Victoria LAC is ready to welcome members of the medical physics community to their beautiful city for our 2009 annual scientific meeting. In addition to the continuing education and networking opportunities that the COMP ASM provides, the Victoria organizers have created some unique opportunities for delegates:

- Brian Price, coxswain of the Canadian Olympic Rowing Team and cancer survivor, will be the 2009 public lecturer. The lecture will be presented in co-operation with the BC Cancer Foundation.
- A 5K fun run will take place on Thursday morning around the harbour circuit. Thank you to LANDAUER for their financial donation to this event.
- The final banquet will be held at the famous Butchart Gardens, a national historic site.

Brian Price, coxswain of the Canadian Olympic Rowing Team and cancer survivor, will be the 2009 public lecturer.

Thank you to Varian, Philips and Elekta for their generous sponsorship of the 2009 meeting. We are also grateful to Best Medical for their continued support of our awards program.

Continuing Education and Networking Opportunities for 2010

Plans are well underway for COMP's inaugural **Winter School** which will be taking place at the Banff Park Lodge from January 24, 2010 to January 28, 2010. Marco Carlone, Sherry Connors, Luc Beaulieu, Dave Rogers and Cheryl Duzenli make up the team working on this important initiative.

The Ottawa LAC has also begun preparations for the 2010 meeting which will be taking place from **June 16th to June 20th**. Mark your calendars and stay tuned for more details!

Professional Liability Insurance

Several inquiries have been made about professional liability insurance for members. We have done some research and have received an initial proposal for a program for COMP which has been reviewed by the Professional Affairs Committee. The annual premium for this program is dependent on the number of members who participate. Details of the proposal will be shared with the membership and the broker that would administer the program will be available to answer any questions.

Expanding our Reach

We continue to explore ways to both expand our membership and better serve our membership segments:

- At the Victoria ASM, we will be hosting a scientific session targeted to members who work in areas other than radiotherapy.
- Time and space has been allocated for Associate members to meet as a group in Victoria. Lisa Gamble is coordinating this group.
- A Student Council has been established and is being co-Chaired by Alejandra Rangel and Nadia Octave. Time and space has also been set aside for this group to meet in Victoria.

Time and space has been allocated for Associate members to meet as a group in Victoria. Lisa Gamble is coordinating this group.

Connecting with Adjacent Communities

The Professional Affairs Committee is working to clarify and streamline our relationships with other organizations so that we are in a better position to advance the medical physics profession. We participated in roundtable discussions at the annual meetings of CAMRT and CAR. The CAR is specifically looking for COMP's participation in working groups they have established. Invitations will be extended to COMP members via email and on the website.

Ms. Nancy Barrett,
COMP/CCPM Executive Director

We participated in roundtable discussions at the annual meetings of CAMRT and CAR. The CAR is specifically looking for COMP's participation in working groups they have established.

I would like to take this opportunity to thank Parminder Basran who is completing his term as Editor of InterACTIONS. COMP members have been well-served by Parminder who has done an excellent job and has been a pleasure to work with.

As always, please feel free to contact me at nancy@medphys.ca or Gisele Kite at admin@medphys.ca at any time with your feedback and suggestions.

CNSC Feedback Forum (English)

RSO Requirement– Changes to the Nuclear Safety & Control Act's Regulations

Submitted by: Mike James
CNSC, Ottawa ON

As you probably know, there is a proposed amendment to the regulations governing Class II Nuclear Facilities. (see Page 98) These include medical linacs, brachytherapy remote afterloaders and radioactive source teletherapy machines. The proposed amendment and accompanying Regulatory Impact Analysis Statement were published in the 6 June 2009 edition of Canada Gazette, Part I, initiating a 30-day period of public consultation, from June 6 to July 6, 2009.

The amendment formalizes the currently required practice of accepting as RSO only persons who have passed an examination administered by the CNSC.

A brief description of the proposal has already been distributed to the affected population. The amendment can be viewed at :

HTML: http://www.gazette.gc.ca/rp-pr/p1/2009/2009-06-06/html/reg2-eng.html

PDF: http://www.gazette.gc.ca/rp-pr/p1/2009/2009-06-06/pdf/g1-14323.pdf

By now I probably have you worried about what changes the CNSC intends to foist on the industry. So I'll repeat that the main effect of the amendment is only to formalize current practice; that is, new RSOs must be accepted, through examination, by the CNSC. Under the regulation, the process will be called "certification".

What's in it for you, the RSO or potential RSO? Formalization includes provisions in the law to ensure that the process is fair. With the proposed amendment, a person who disagrees with our decisions must be given an opportunity to be heard. Also, the process is spelled out – CNSC staff can not arbitrarily change it.

The amendment will include:

- the requirement for each licensee to appoint a RSO to oversee the licensed activities
- the requirement that the RSO be certified by the CNSC
- any person now acting as RSO will be certified without examination
- the content of an application for certification
- the requirement for an examination
- a requirement for an uncertified, but qualified, "backup" RSO
- various provisions required for fairness and good administration

Now you see my slight weaseling when I said "main effect" in the third paragraph. There are two new requirements, both of them minor. These are:

1. a backup RSO – this person must have reasonable qualification to act in the RSO's absence, but need not be certified. He or she must be designated in writing, but the CNSC doesn't need to be informed. (Keep your paperwork, though – we may ask for it during an inspection).
2. Licensees must apply to have current RSOs certified. This is a simple application so we will have on file a minimum of information about all RSOs – there is no exam here, we know you are all good people.

That sums it up. The amendment tidied up the process and won't add significantly to your workload.

For further information see the CNSC website at:
http://www.nuclearsafety.gc.ca/eng/lawsregs/proposedamendments/class2-RSO/index.cfm

Or contact me:
Michael F. James, P. Eng.
Physics Specialist
Class II Nuclear Facilities and Equipment Division
Canadian Nuclear Safety Commission
(613) 993-7867
mike.james@cnsc-ccsn.gc.ca

CNSC Feedback Forum (French)

L'exigence pour les RRP – Modification aux Règlements sur les installations nucléaires et l'équipement réglementé de Catégorie II.

Submitted by: Mike James
CNSC, Ottawa ON

Tel qu'annoncé, il y a une modification proposée aux règlements régissant les installations nucléaires de Catégorie II. Ces installations comprennent les accélérateurs linéaires médicaux, les appareils de curiethérapie à projecteur de sources télécommandé et les appareils de téléthérapie à source radioactive (pg 98). La modification proposée et son Résumé de l'étude d'impact de la réglementation ont été publiés dans le numéro du 6 juin 2009 de la Gazette du Canada, Partie I**,** pour une période de consultation publique de 30 jours, du 6 juin au 6 juillet.Cette modification officialise la pratique utilisée pour accepter seulement, comme un RRP, les personnes qui ont réussi l'entrevue avec la CCSN.

Une brève description de la modification proposée a été soumise aux personnes concernées. Cette modification peut être accédée en ligne aux adresses suivantes :

HTML : http://www.gazette.gc.ca/rp-pr/p1/2009/2009-06-06/html/reg2-fra.html

PDF : http://www.gazette.gc.ca/rp-pr/p1/2009/2009-06-06/pdf/g1-14323.pdf

Maintenant que vous êtes assez effrayés par les intentions de la CCSN, je vais vous répéter que la seule conséquence de la modification est d'officialiser la pratique courante utilisée : les nouveaux RRP doivent être approuvés par la CCSN, à la suite d'une entrevue. Sous la réglementation, ce processus deviendra une accréditation.

Qu'est ce que cela implique pour vous, les RRP ou les futurs RRP ? L'officialisation du processus inclut des dispositions dans la loi pour vous assurer que le processus est juste et équitable. Avec la modification proposée, une personne qui est en désaccord avec la décision de la CCSN a la possibilité d'être entendu. De plus, le processus est clairement défini – le personnel de la Commission ne peut pas arbitrairement changer le processus.

Cette modification va inclure :

- l'obligation pour chaque titulaire de permis de nommer un RRP qui surveillera les activités autorisées
- l'obligation que le RRP soit accrédité par la CCSN
- toute personne qui agit maintenant en tant que RRP va être accréditée sans entrevue
- le contenu d'une demande d'accréditation
- la nécessité d'une entrevue
- l'obligation d'un RRP remplaçant non accrédité mais compétent
- diverses dispositions requises à des fins d'équité et de bonne administration

Maintenant que vous avez vu mes intentions à peine voilées à propos de la seule conséquence du 3e paragraphe, il y a 2 nouvelles exigences mineures. Elles sont :

1. d'avoir un RRP remplaçant – Cette personne doit avoir des qualifications acceptables pour remplacer le RRP durant son absence, mais n'a pas besoin d'être accréditée. Cette personne doit être désignée par écrit, mais la CCSN n'a pas besoin d'être informée. (Ce document peut cependant être demandé lors d'une inspection).
2. que le titulaire doit appliquer pour accréditer le RRP actuel. Il s'agit d'une application simple, afin que la CCSN ait un minimum d'information au sujet de tous les RRP. Il n'y aura aucune entrevue, puisque nous savons que vous êtes tous de bonnes personnes.

Ceci résume la modification proposée. Celle-ci ficelle le processus et ne devrait pas augmenter votre charge de travail.

Pour plus d'information, référer vous au site internet de la CCSN :

http://www.nuclearsafety.gc.ca/fr/index.cfm

Ou contactez-moi :

Michael F. James, P. Eng.
Physics Specialist
Class II Nuclear Facilities and Equipment Division
Canadian Nuclear Safety Commission
(613) 993-7867
mike.james@cnsc-ccsn.gc.ca

REGULATIONS AMENDING THE CLASS II NUCLEAR FACILITIES AND PRESCRIBED EQUIPMENT REGULATIONS

1. (1) The definitions "certificate" and "certified" in section 1 of the English version of the *Class II Nuclear Facilities and Prescribed Equipment Regulations* (see footnote 1) are replaced by the following:

"certificate" means a document issued by the Commission or by a designated officer authorized under paragraph 37(2)(*a*) of the Act, indicating that a model of Class II prescribed equipment is certified, or authorized under paragraph 37(2)(*b*) of the Act, indicating that a person is certified. (*homologation* et *accréditation*)

"certified" means certified by the Commission under paragraph 21(1)(*h*) or (*i*) of the Act or by a designated officer authorized under paragraph 37(2)(*a*) or (*b*) of the Act. (*homologué* et *accrédité*)

(2) Section 1 of the French version of the Regulations is amended by adding the following in alphabetical order:

« accréditation » Document délivré par la Commission ou par un fonctionnaire désigné autorisé en vertu de l'alinéa 37(2)*b*) de la Loi et qui atteste la compétence d'une personne. (*certificate*)

« accrédité » Accrédité par la Commission en vertu de l'alinéa 21(1)*i*) de la Loi ou par un fonctionnaire désigné autorisé en vertu de l'alinéa 37 (2)*b*) de la Loi. (*certified*)

2. The Regulations are amended by adding the following after section 15:

Radiation Safety Officers

Appointment and Certification

15.01 (1) Every licensee who operates a Class II nuclear facility shall appoint a radiation safety officer.

(2) Every licensee who services Class II prescribed equipment shall appoint a radiation safety officer.

15.02 No person shall be appointed to the position of radiation safety officer unless the person has been certified by the Commission or a designated officer authorized under paragraph 37(2)(*b*) of the Act.

Application for Certification

15.03 An application by a licensee for certification of a person as a radiation safety officer shall include the following information:

(*a*) the name of the person;

(*b*) a record of that person's education, training and experience;

(*c*) a statement by the licensee that, in their opinion, the person is capable of performing the duties of the position; and

(*d*) the Class II prescribed equipment in respect of which the person may be certified.

15.04 (1) The Commission, or a designated officer authorized under paragraph 37(2)(*b*) of the Act, may certify a person for the position of radiation safety officer if

(*a*) the person has successfully completed an examination that is recognized by the Commission; and

(*b*) in the opinion of the Commission, or of the designated officer, the person is capable of performing the duties of the position.

(2) A certificate issued under subsection (1) shall specify the Class II prescribed equipment in respect of which it is valid.

15.05 A certificate comes into effect on the day on which it is issued and is valid for the period in which the person is employed by the licensee as a radiation safety officer.

15.06 (1) A person who is employed as a radiation safety officer on the day on which these Regulations come into force is deemed to have been certified in accordance with section 15.04.

(2) A licensee shall notify the Commission of the name of the radiation safety officer and the Class II prescribed equipment in respect of which the deemed certification is valid within 30 days after the day on which these Regulations come into force.

Refusal to Certify

15.07 (1) The Commission or a designated officer authorized under paragraph 37(2)(*b*) of the Act shall notify a licensee who has applied for the certification of a person, and the person in respect of whom certification is being sought, of a proposed decision not to certify the person and the basis for that proposed decision at least 30 days before refusing to certify the person.

(2) The notice shall include a description of the licensee's and the person's right to be provided with an opportunity to be heard in accordance with the procedure referred to in section 15.09.

Decertification

15.08 (1) The Commission or a designated officer authorized under paragraph 37(2)(*b*) of the Act shall notify a person in respect of whom a certificate has been issued, and the licensee concerned, of a proposed decision to decertify the person and the basis for that proposed decision at least 30 days before decertifying the person.

(2) The notice shall include a description of the licensee's and the person's right to be provided with an opportunity to be heard in accordance with the procedure referred to in section 15.09.

Opportunity To Be Heard

15.09 (1) If a licensee or a person referred to in section 15.07 or 15.08 has received a notice and has requested, within 30 days after the date of receipt of the notice, an opportunity to be heard orally or in writing, the licensee or the person shall be provided with an opportunity to be heard in accordance with the request.

(2) On completion of a hearing held in accordance with subsection (1), the licensee or the person shall be notified of the decision and the reasons for it.

Temporary Replacement

15.1 Every licensee shall designate in writing a person qualified to replace the certified radiation safety officer during the radiation safety officer's absence.

15.11 A person designated under section 15.1 may replace the certified radiation safety officer for not more than 60 working days in any consecutive 365-day period.

Exemption from Certification

15.12 The requirement in section 15.01 does not apply in respect of a Class II nuclear facility for which a person who has duties equivalent to those of a radiation safety officer is designated and who is certified under subsection 9(2) of the *Class I Nuclear Facilities Regulations*.

COMING INTO FORCE

3. These Regulations come into force on the day on which they are registered.

Compliance with CAPCA Megavolt QA Recommendations

Submitted by: Brenda Clark
Ottawa Regional Cancer Centre, Ottawa, ON

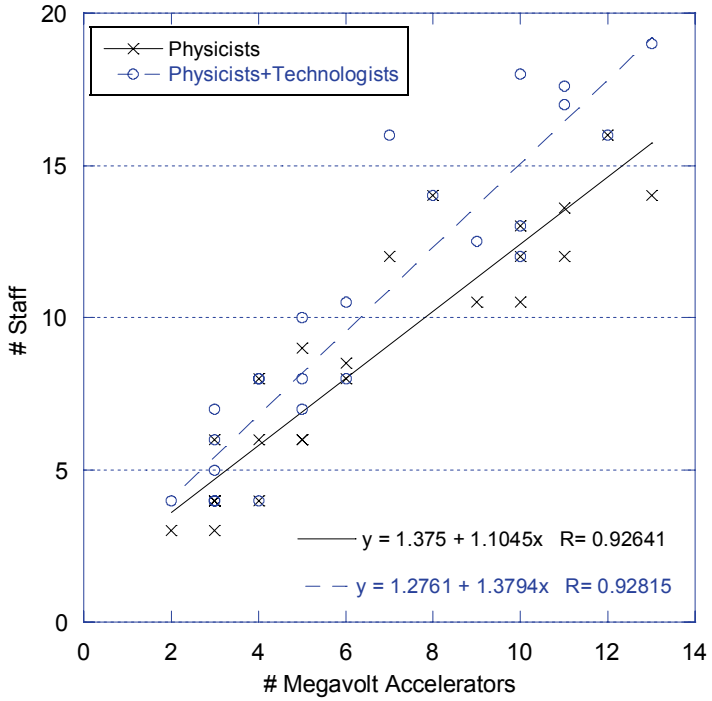
A questionnaire was distributed to (hopefully) all Canadian cancer centres in the middle of March, this is a consolidation of the 25 responses received. The survey addressed megavolt accelerator quality assurance, or more specifically, the 107 specific tests recommended in the following 4 pertinent "CAPCA Standards for Quality Control at Canadian Radiation Treatment Centres" available from the COMP website:

1. Medical Linear Accelerators
2. Multileaf Collimators
3. Electronic Portal Imaging Devices

Linac Integrated kV Imaging Systems and CBCT Simulators

The responses thus characterise the QA aspects of megavolt linear accelerator operations at 25 radiation programs from Halifax to Victoria and many points in between, employing a total of 211.1 medical physicists who support 160 megavolt accelerators. (The 0.1 results from the sum of three 0.5s and a 0.6!) On average, there are 1.4 physicists employed for each accelerator, range 1.0-2.0 (Figure 1). 17/25 centres employ physicist support staff (a total of 41.5 technologists or assistants or associates) to augment the physicist staffing, bringing the total to an average of 1.6 per accelerator, range 1.2-2.3. Interestingly, the compliance numbers for those centres without physics technologists are in the middle of the range and do not appear to reflect an increased physicist staffing in compensation. Nor do they reflect a reduction in compliance with the CAPCA recommendations, perhaps due to the employment in some cases of graduate students for routine QA.

The average number of clinical hours per day reported is 10.1, range 8.5-13.5. The average time spent on morning QA prior to treatment at these centres is 43 minutes (range 30-90 minutes) and in most centres (18/25), the radiation therapists perform this task. Only 3 centres report physics staff doing this QA and 4 centres schedule a mix of therapy and physics staff for this task. Only 6 of these centres are not routinely performing daily image-guided treatments indicating that this technology appears to have gained widespread acceptance relatively quickly. The addition of daily image guidance has increased the morning QA requirements by an average of 16 minutes with 9/11 centres adding 15 minutes.



***F*igure 1: Physicist and Physics Technologist Staffing as a Function of Number of Megavolt Units**

(Continued on page 101)

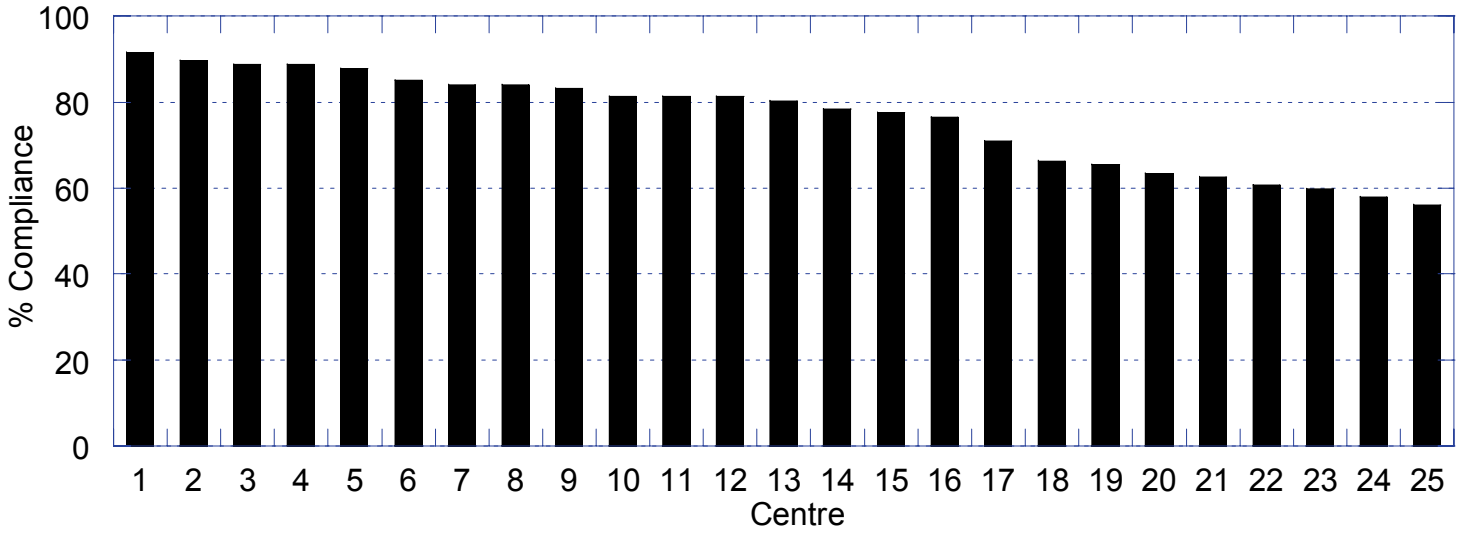


Figure 2: Compliance with CAPCA "Best Practice Guidelines" as a Function of Centre

Compliance with CAPCA … continued

1	DL1 Door interlock/last person out	55	ME4 Artifacts
2	DL2 Motion interlock	56	ME5 Spatial distortion
3	DL3 Couch brakes	57	ME6 Monitor controls
4	DL4 Beam status indicators	58	ME7 Records
5	DL5 Patient audio-visual monitors	59	MS1 kV detector & source axes/gantry rotn axis coinc.
6	DL6 Room radiation monitors	60	MS2 kV detector panel virtual alignment
7	DL7 Beam interrupt/ counters	61	MS3 kV source & detector mechanical positioning test
8	DL8 Lasers/crosswires	62	MS4 Records
9	DL9 Optical distance indicator	63	SE1 Spatial resolution
10	DL10 Optical back pointer	64	SE2 Noise
11	DL11 Field size indicator	65	SE3 On screen measurement tools
12	DL12 Output constancy - photons	66	SE4 Set-up verification tools
13	DL13 Dynamic wedge factors	67	SS1 X-ray Generation : kV
14	DL14 Output constancy - electrons	68	SS2 X-ray Generation : HVL (lowest & highest)
15	DE1 Mechanical integrity	69	SS3 X-ray Generation: Output linearity
16	DE2 Electrical integrity	70	SS4 Radiographic: High Contrast Resolution
17	DE3 Collision interlocks	71	SS5 Radiographic: Low Contrast Resolution
18	DE4 Image quality	72	SS6 Radiographic: Gray Scale Linearity
19	DS1 Door interlock	73	SS7 Radiographic: Automatic Brightness Control (ABC)
20	DS2 Beam status indicators	74	SS8 Volumetric: Image uniformity – mean
21	DS3 Emergency off buttons	75	SS9 Volumetric: CT # accuracy of other materials
22	DS4 Detector anti-collision (arm & device body)	76	SS10 Volumetric: Low contrast resolution
23	DS5 kV source anti-collision (arm & device body)	77	SS11 Volumetric: High contrast resolution
24	DS6 Image uniformity1	78	AL1 Reference dosimetry
25	DS7 Radn field coinc. with elect. readout & light field	79	AL2 Relative output factor
26	DS8 kV/kV and/or MV/kV isocentre alignment check	80	AL3 Wedge transmission factor
27	DS9 Shift calculations (2D/2D and 3D/3D)	81	AL4 Accessory transmission factor
28	DS10 Couch motion accuracy	82	AL5 Output reproducibility vs. gantry angle
29	ML1 Emergency off	83	AL6 Beam symmetry reproducibility vs. gantry angle
30	ML2 Wedge, tray cone interlocks	84	AL7 Monitor chamber linearity
31	ML3 Accessories integrity and centering	85	AL8 End monitor effect
32	ML4 Gantry angle readouts	86	AL9 Collimator rotation isocentre
33	ML5 Collimator angle readouts	87	AL10 Gantry rotation isocentre
34	ML6 Couch position readouts	88	AL11 Couch rotation isocentre
35	ML7 Couch isocentre	89	AL12 Coincidence of collimator, gantry, couch axes
36	ML8 Couch angle	90	AL13 Coincidence of isocentres
37	ML9 Optical distance indicator	91	AL14 Couch deflection
38	ML10 Crosswire centering	92	AL15 Independent quality control review
39	ML11 Light/radiation coincidence	93	AM1 Leaf transmission (all energies)
40	ML12 Field size indicator	94	AM2 Leakage between leaves (all energies)
41	ML13 Relative dosimetry	95	AM3 Transmission through abutting leaves
42	ML14 Central axis depth dose	96	AM4 Stability with gantry rotation
43	ML15 Beam flatness	97	AM5 Alignment with jaws
44	ML16 Beam symmetry	98	AM6 Independent quality control review
45	ML17 Records	99	AE1 Independent quality control review
46	MM1 Digitizer check (if used)	100	AS1 Radiation Dose (CTDI)
47	MM2 Light and radiation field coincidence	101	AS2 Simulated planning
48	MM3 Leaf positions for standard field template	102	AS3 Spatial linearity verification
49	MM4 Electron field interlocks	103	AS4 Slice reconstruction width verification
50	MM5 Leaf alignment	104	AS5 Independent quality control review
51	MM6 Records	105	PM1 Verification of transferred data vs template
52	ME1 Positioning in the imaging plane	106	PM2 Daily verification of correct data
53	ME2 Positioning perpendicular to the imaging plane	107	PM3 Verification of record & verify programming
54	ME3 Image quality		

Table 1: List of 107 CAPCA Recommended Daily (D), Monthly (M), Semi-Annual (S), Annual (A) and Patient Specific (P) Tests for Linacs (L), MLCs (M), EPIDs (E) and Linac Integrated kV Imagers (S).

(Continued from page 99)

In addition to these statistics, the survey asked the question "Do you comply with this recommendation?" for each of 28 daily, 34 monthly, 15 semi-annual, 27 annual and 3 patient specific tests, listed in Table 1. Compliance was measured in terms of the number of "no" answers to the question at the recommended frequency.

The good news is that the overall compliance ranged from a high of 92% down to 56% (Figure 2). The results are encouraging but it is worth noting that none of the respondents are 100% compliant which may indicate that some or all of the recommendations are either inappropriate or challenging to implement. Additionally, if a centre is performing a test at a frequency lower than recommended, it was counted as non-compliant. This "all or nothing" scoring gives no weight to partial compliance and represents a worst case interpretation of the data. A more detailed look reveals some interesting issues.

Of the 107 tests, only 8 (4 daily and 4 annual) are done by each centre which responded, and 7 of those are linac tests (Figure 3). All other tests have some degree of non-compliance several up to 70 - 80%! Some of the tests that are performed the least include the EPID tests at all frequencies and the annual MLC tests.

The aim of this survey was to gain an understanding of the level of compliance with these CAPCA recommendations across Canada and to provide some specific information to prompt a review and updating of the testing prescribed. Hopefully this summary provides that motivation.

Many thanks to the physicists at 25 centres who responded, listed approximately from west to east: BC Cancer Agency – Vancouver Island, Vancouver, Fraser Valley and Southern Interior; Tom Baker Cancer Centre; Cross Cancer Institute; Saskatoon Cancer Centre; Alan Blair Cancer Centre (Regina); Cancer Care Manitoba (100% response so far!); Windsor Regional Cancer Centre; London Regional Cancer Program; Juravinski Cancer Centre; Odette Cancer Centre (known to most of us as Toronto-Sunnybrook); Lakeridge Health Oshawa;

(Continued on page 120)

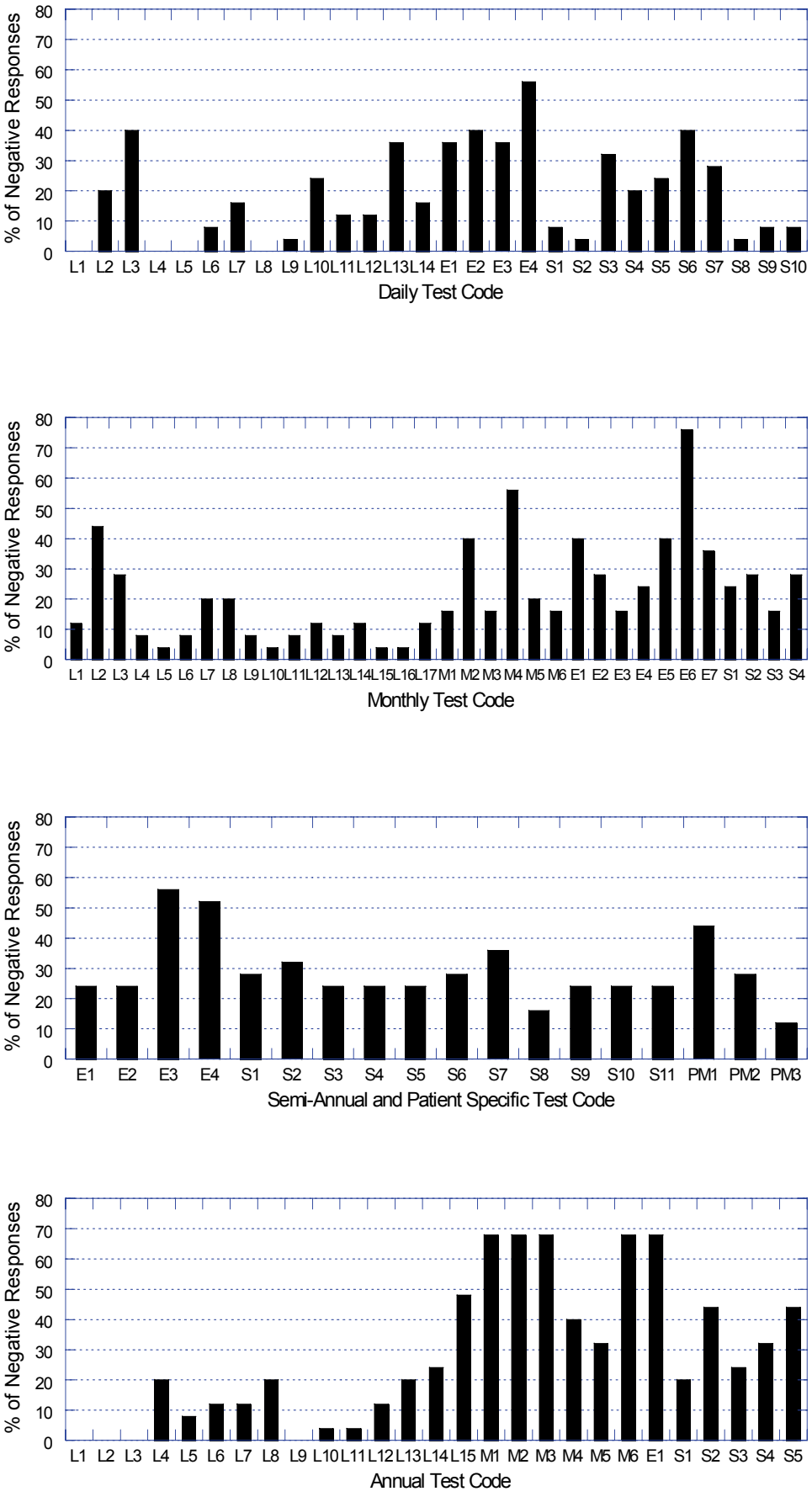


Figure 3: Percentage of Negative Responses for Individual Daily, Monthly, Semi-Annual and Patient Specific (PM1-3) and Annual Tests

Feature Article:
Multimodality Image-Guidance for Efficient Implementation of HDR Brachytherapy for Cervix Cancer

Diedre L Batchelar[1] Ph.D.
Melanie TM Davidson[1] Ph.D
David P D'Souza[2] MD

[1]Department of Medical Physics, Sunnybrook Odette Cancer Centre
[2]Department of Radiation Oncology, London Regional Cancer Centre

Corresponding Author:
Dept. Medical Physics
Odette Cancer Centre
2075 Bayview Avenue
Toronto ON M4N 3M5
diedre.batchelar@sunnybrook.ca

INTRODUCTION

In the last ten years the use of advanced tomographic imaging techniques in brachytherapy has grown dramatically, largely through the application of ultrasound, CT, and MRI techniques to refine the planning and delivery of prostate brachytherapy. Cervix brachytherapy has largely lagged behind prostate in the incorporation of advanced imaging into routine practice. High-dose rate (HDR) brachytherapy for cervical cancer is a resource intensive treatment delivered in multiple fractions (typically 3-5). To cope with this workload many centres are planning based on orthogonal films and delivering treatment using standard loadings.

The continued use of film based planning is often justified by the long history of film based planning for intracavitary treatments of cervical cancer. This experience was, however, built up during the low-dose rate (LDR) era where applicators compatible with CT and MRI were not available, making the use of developing imaging technologies impossible. It is also questionable if this experience is directly applicable to HDR where the dose rate has increased more than a hundred-fold and where a good therapeutic ratio is highly dependent upon geometric sparing of neighbouring organs at risk, principally the bladder, rectum and sigmoid. Even when using LDR, proper positioning of intracavitary applicators was singled out as the most important prognostic factor in improving local control of disease [1]. The only information available in orthogonal radiographs is the applicator positioning relative to bony anatomy, which can make it difficult to judge the quality of an implant (Figure 1).

This difficulty, along with the advent of HDR delivery techniques and the increased availability of CT and MRI compatible applicators provides motivation for a growing movement to 3D image based planning for cervix brachytherapy. In particular, both GEC-ESTRO and the American Brachytherapy Society (ABS) are recommending MRI based planning for each brachytherapy insertion [2-4] due to its superior soft-tissue contrast and ability to separate normal tissues from cancerous lesions. Unfortunately it is not generally feasible in Canada to implement the routine use of MRI for each brachytherapy insertion. Thus centres in Canada are left with two options: continue with film based planning or using what tools are available to improve what and where we can.

This is the approach we took at the London Regional Cancer Program when we implemented our HDR cervix program. Our objective was to implement an image-guidance

(Continued on page 103)

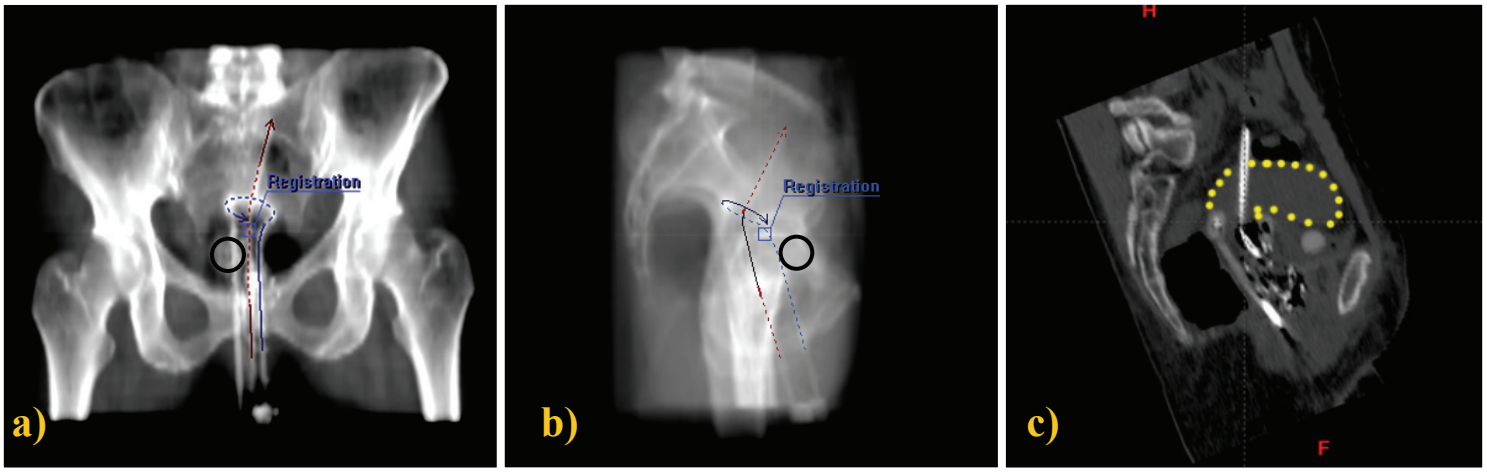


Figure 1: (a) and (b) are orthogonal digitally reconstructed radiographs indicating a properly executed implant, (c) is the associated sagittal CT view demonstrating a uterine perforation.

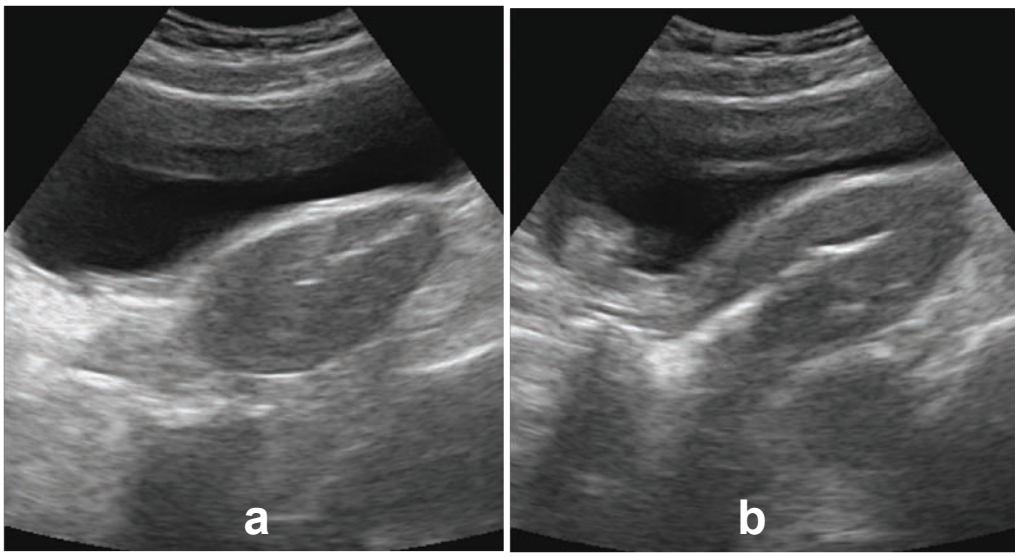


Figure 2: Sagittal images demonstrating the visibility of the intrauterine tandem on US. In (a) the tandem is too advanced within the uterine canal and is pushing against the fundus. Real-time US imaging permitted correct placement of the tandem (b).

(Continued from page 102)

program using technology that was readily available or easy to acquire. Without MRI we could not contour and prescribe to a target but we aimed to ensure accurate placement of the applicators in every insertion and to allow for 3D treatment planning for conformal avoidance of the organs at risk (OAR). Due to the increased resource intensity relative to LDR delivery, our overall goal was to promote as efficient a workflow as possible.

Implementing image-based planning for cervix brachytherapy requires careful assessment of a department's resources such as availability of imaging, access to the HDR suite, staffing levels, and availability of anaesthesia. Considering all these factors, CT-planning for each of four fractions was not logistically feasible at our institution. Our solution to reduce workload and minimize inter-fraction variability in the positioning of the applicators was to deliver two fractions of brachytherapy (typically separated by 18 hours) for each of two insertions. Placing the patient on a low residue diet and using standardized bladder filling (via a urinary catheter) stabilizes the OARs between the two fractions [5].

Initially we had no relevant imaging abilities in our HDR suite. We did, however, have access to a CT-SIM making post-operative CT planning possible. After incorporating this into our practice in 2005, we discovered occult perforations in 10% of our insertions (Figure 1), a rate that is con-

(Continued on page 112)

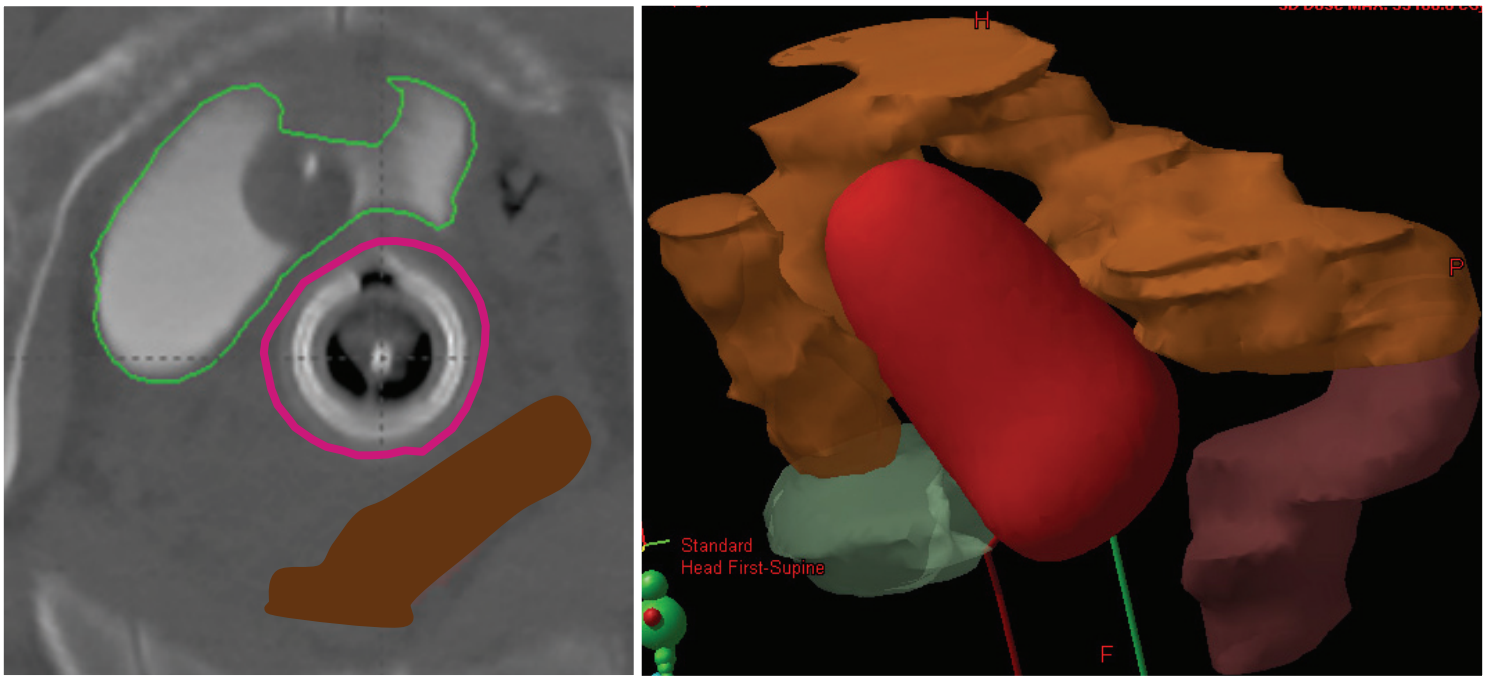
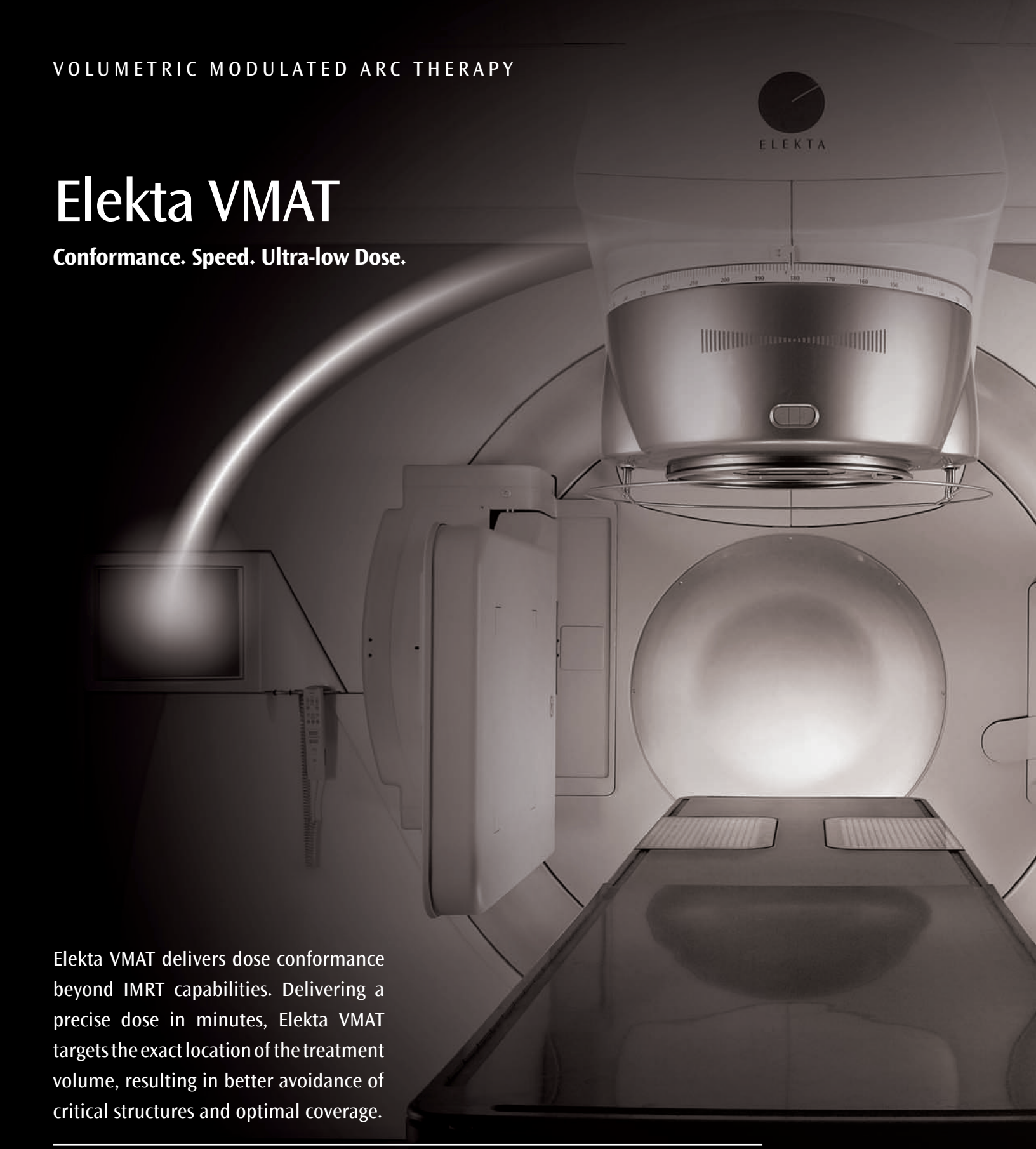


Figure 3: Images illustrating the additional information about OARs available from CT. (a) is an axial slice at the level of the ring applicator demonstrating the volume of bladder in the high-dose region. (b) is a 3D rendering illustrating the sigmoid colon wrapping around the 100% dose cloud.

VOLUMETRIC MODULATED ARC THERAPY

Elekta VMAT

Conformance. Speed. Ultra-low Dose.



Elekta VMAT delivers dose conformance beyond IMRT capabilities. Delivering a precise dose in minutes, Elekta VMAT targets the exact location of the treatment volume, resulting in better avoidance of critical structures and optimal coverage.

Conformance
One or multiple arcs for precise dose control resulting in better avoidance of critical structures

Speed
Dramatically shorter treatment times than current IMRT techniques

Ultra-low Dose
Allows daily 3D volumetric imaging and fewer MUs

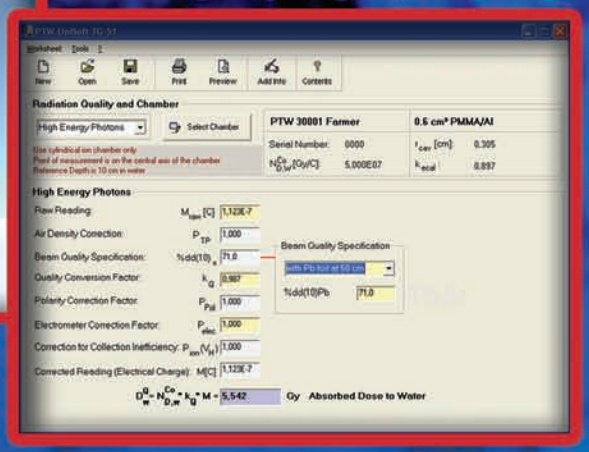
ELEKTA ONCOLOGY

www.elekta.com/vmat

Elekta VMAT has been submitted for Health Canada approval.

Absolute STIMULUS PACKAGE

More Than 35% off



K&S

COMPLETE ABSOLUTE DOSIMETRY PACKAGE =

cost of an electrometer including ADCL CALIBRATIONS!

"There are many competitive products when searching for an ideal device for clinical use. We choose PTW because they are reliable and the staff is always so very helpful and friendly. We have a long list of PTW ion chambers and electrometers. They are highly accurate, stable and provide excellent resolution."

Jinchu Huang, Ph.D., Hoag Cancer Center, Newport Beach, CA

"We use PTW measuring equipment for monthly, annual and IMRT QA. Monthly in water TG-51 measurements with a PTW ion chamber is accurate and reliable. Annual machine QA with our full compliment of PTW scanning equipment provides accurate ion chamber control and efficient data collection. The new MC2 software allows efficient comparison between measured and previous QA and commissioning data. We use the seven29 as our primary IMRT QA device because of its reliability and our confidence in ion chamber QA measurements."

Jeff Mumper, MS, ABR, Bloomington Hospital, Bloomington, IN

PTW

PTW-NEW YORK CORPORATION
205 Park Avenue
Hicksville · New York 11801
Phone (1-516) 827 3181
Fax (1-516) 827 3184
ptw@ptwny.com
www.ptwny.com

US & Canadian customers only. K&S is a subsidiary of PTW Freiburg.

GREEN REVOLUTION™

Best® Theratronics has been practicing green for more than 50 years!

Best® Gamma Teletherapy™ Systems (Theratrons) have provided low-cost dependable service around the world for decades. Our units have significantly lower operating costs – almost 70% less than Linacs. We have a number of financing options with low investment and monthly payments.

Best® Theratronics 413 March Road, Ottawa, ON K2K 0E4 Canada
phone 613 591 2100 866 792 8598 fax 613 591 6627 www.theratronics.ca

AFRICA | ASIA | EUROPE | LATIN AMERICA | MIDDLE EAST | NORTH AMERICA

Owing to their simple design, Theratrons can be operated on a generator or solar power in the event there is a power outage or shortage. Units have a battery backup to allow the retention of timer settings in the event of a power loss. In fact, when Eastern Canada and Eastern US were hit with a 2-day power outage on August 14–16, 2003, Theratrons were still treating patients while the linear accelerators were inoperable!

Most of the material from a unit is recycled when the unit is decommissioned by Best® Theratronics. Older Theratron and Phoenix units can be refurbished and upgraded on site to the latest technology with the majority of mechanical components being reused.

Theratron® Equinox™

Best® Gamma Teletherapy™ Systems

Can be equipped or upgraded with the latest IMRT and IGRT technologies including:

- Multi-leaf collimator (MLC) for IMRT
- nomos*STAT*™ Serial Tomotherapy
- CORVUS™ Treatment Planning Systems with forward and inverse planning
- kV (single or dual detector) or MV imaging-based IGRT solutions

These upgrades cost significantly less than comparable Linac based solutions!

Best® nomosSTAT™

Best® Gamma Teletherapy™ Systems are Energy Efficient:

- Operate on 115 V AC or 230 V AC single phase, 2 kVA
- Require no special cooling for any part of the control system — eliminating the additional electrical burden for the facility

Best® CORVUS®

** Products shown here may not be cleared for sale in all markets. Contact us for details on product availability in your region.*

For more information, please contact:
GammaTeletherapy@nomos.com
phone: 412 312 6700 800 70 NOMOS

Best nomos One Best Drive, Pittsburgh, PA 15202 USA
phone 412 312 6700 800 70 NOMOS fax 412 312 6701 www.nomos.com
AFRICA | ASIA | EUROPE | LATIN AMERICA | MIDDLE EAST | NORTH AMERICA

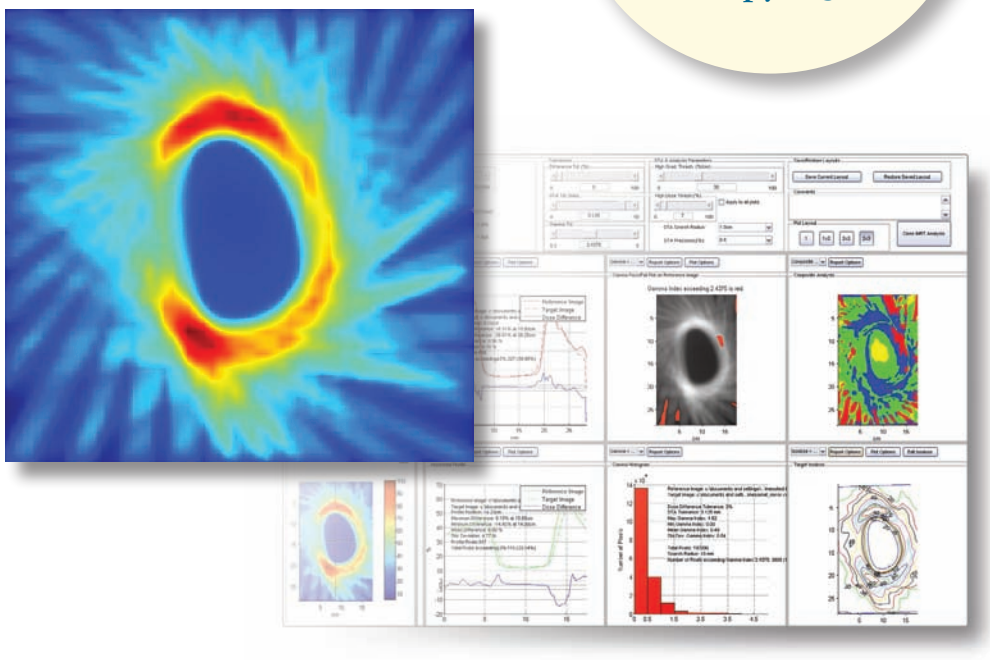
Best®
healthcare for everyone

Been There, Doing That

Rotational Therapy Dosimetry Since 1996

"RapidArc, Tomotherapy, VMAT ...you can QA these therapies with your EPID, CR, ion chamber or film using RIT113. I would not want to commission or do patient QA without RIT."

"AGREED! The best and only reliable way to perform rotational therapy QA."



RIT with RunQueueA

It's all about **You**

IMRT, IGRT, & VMAT QA Solutions

www.radimage.com ▪ 719-590-1077 ▪ sales@radimage.com

CURRENT CORPORATE MEMBERS
JUNE 2009

Accuray Inc.

Phone: 603-491-5022
www.accuray.com

Contact: Ryan Baker
rbaker@accuray.com

Best Medical Canada

Phone: 613-591-2100 ext 108
www.bestmedical.com

Contact: Linda Bols
lbols@teambest.com

CDR Systems

Phone: 403-850-7035
www.cdrsys.ca

Contact: Carl Denis
carldenis@cdrsys.ca

Core Oncology

Phone: 416-201-2011
www.coreoncology.com

Contact: Norm LeRoux
Norm.LeRoux@coreoncology.com

CSP Medical

Phone: 1-800-265-3460
www.cspmedical.com

Contact: Steve Gensens
sg@cspmedical.com

Donaldson Marphil Medical Inc
Phone: 1-888-933-0383
www.donaldsonmarphil.com

Contact: M. Michel Donaldson
md@donaldsonmarphil.com

Elekta Canada

Phone: 770-670-2592
www.elekta.com

Contact: Doris AuBuchon
Doris.AuBuchon@elekta.com

Harpell Associates Inc.

Phone: 1-800-387-7168
www.harpell.ca

Contact: Ron Wallace
info@harpell.ca

Landauer Inc

Phone: 708-755-7000
www.landauerinc.com

Contact: William Megale
sales@landauerinc.com

LAP of America

Phone: 561-416-9250
www.lap-laser.com

Contact:: Trent Van Arkel
tava@lap-laser.com

Modus Medical Devices Inc

Phone: 519-438-2409
www.modusmed.com

Contact: John Miller
jmiller@modusmed.com

Philips Healthcare

Phone: 1-877-744-5633
www.philips.com/healthcare

Contact: Leanne Buck
Leanne.Buck@philips.com

PTW

Phone: 516-827-3181
www.ptwny.com

Contact: Keyvan Jamshidi
Keyvan@ptwny.com

ScandiDos Inc.

Phone: 804-550-3541
www.scandidos.com

Contact: Carrie Dugai
Carrie.dugai@scandidos.com

Siemens Canada

Phone: 514-822-5141
www.siemens.com

Contact: René Boyer
rene.boyer@siemens.com

Standard Imaging Inc

Phone: 1-800-261-4446
www.standardimaging.com

Contact: Eric DeWerd
edewerd@standardimaging.com

Sun Nuclear

Phone: 321-259-6862 ext 275
www.sunnuclear.com

Contact: Luis Rivera
lrivera@sunnuclear.com

TomoTherapy Inc.

Phone: 608-824-2889
www.tomotherapy.com

Contact: Jodi Pachal
jpachal@tomotherapy.com

Varian Medical Systems

Phone: 702-938-4748
www.varian.com

Contact: Rosie Dinh
rosie.dinh@varian.com

We would like to gratefully acknowledge the support of the following companies for the 55th Annual Scientific Meeting and CCPM Symposium:

GOLD SPONSOR

VARIAN medical systems | A partner for life

SILVER SPONSORS

PHILIPS

ELEKTA

AWARDS SPONSOR

Best® medical canada

The following companies will be exhibiting at the 55th Annual Scientific Meeting and CCPM Symposium:

VARIAN medical systems | A partner for life	Varian Medical Systems	PHILIPS	Philips Healthcare
ELEKTA	Elekta, Inc.	Best® medical canada	Best Medical Canada
LANDAUER®	Landauer Inc.	LAP LASER	LAP of America
RIT	Radiological Imaging Technology Inc.	TomoTherapy	TomoTheraphy Inc.
BrainLAB	BrainLab	SIEMENS	Siemens Canada Ltd.
SUN NUCLEAR corporation	Sun Nuclear Corporation	CSP MEDICAL	CSP Medical
CORE ONCOLOGY	Core Oncology	CDR SYSTEMS www.cdrsys.ca Custom Solutions For Radiation Oncology	CDR Systems Inc.
STANDARD IMAGING	Standard Imaging Inc.	PTW	PTW NY
	Canadian Nuclear Safety Commission	HARPELL ASSOCIATES INC.	Harpell Associates Inc.
dm DONALDSON MARPHIL MEDICAL	Donaldson Marphil Medical Inc.	ORFIT industries AMERICA	Orfit Industries America
ScandiDos	ScandiDos, Inc	ACCURAY®	Accuray Inc.

Feature… continued

(Continued from page 103)

sistent with published perforation rates [6]. An additional 15% were judged to be clinically unacceptable due to extreme displacement of the tandem from the uterine canal. Patients with poor implant geometry or perforations had the applicators removed and returned at a later date for a second insertion, often with the aid of a gynaecological oncologist and an ultrasound radiologist to minimize the chance of repeat failures. This repetition of insertions was an inefficient use of resources and distressing to the patients. We sought to ameliorate this situation by performing routine trans-abdominal ultrasound guidance of the placement of the tandem. Our goal was to ensure that the entire procedure could be performed with radiation therapy personnel and equipment.

Adequate US capabilities may already exist in many brachytherapy departments, or it can be acquired with a relatively small investment of capital funds. To assess the benefit of routine US guidance we prospectively implemented the use of US for all cervix insertions performed within a 9 month period. Assessment was based on the impact of US on applicator choice, total insertion time, perforation rates, and frequency of out of department consultations. These results were then compared to the cohort treated prior to the introduction of US guidance [7].

Thirty-five insertions for intracavitary brachytherapy were performed in 21 consecutive women with cervix cancer during the study time frame. Prior to this 59 insertions had been performed with out the use of US. In all cases, CT imaging was used for treatment planning as well as to assess perforation and applicator suitability. Routine use of US was found to offer several improvements. Examination of the US images directly before insertion allowed for better selection of either tandem length or angle in 50% of cases. In all cases dilation of the cervix and tandem insertion could be clearly visualized (Figure 2). In several cases it was possible to identify that the tandem was not initially well positions and in all cases it was possible to correct for this (Figure 2). Real-time guidance of the procedure reduced the average insertion time by a statistically significant 8 minutes. The use of ultrasound also reduced the need for consults from surgeons from 38% to 6% of cases while radiology consults were eliminated. Most importantly, as confirmed by post-op CT, no applicators were misplaced and there were no uterine perforations.

Following applicator insertion, individualized planning based on CT was performed for each insertion and the same plan applied to each of the two fractions per insertion. Although CT has obvious advantages over film, it does have a major limitation in that it cannot resolve the target against the soft-tissue background of the normal tissues. It can, however, allow visualization of the dose pattern in 3D against the uterus, bladder, rectum, and sigmoid, and this is a significant advantage over 2D planning techniques[8]. CT permits full volumetric assessment of the dose to these organs as opposed to the point based dose monitoring used with 2D planning. This is important because studies have shown that the true maximum doses to the bladder and rectum can be significantly greater than the ICRU point doses [9,10], doses which have never been shown to strongly correlate with complication rates [11]. Additionally, film based planning provides no means of assessing the dose to the sigmoid colon, an organ which is the source of many complications and which often lies in close proximity to the uterus (Figure 3).

Once CT images are acquired, they are transferred to the planning system and critical organs are contoured. Initially, a standard treatment plan prescribed to point A is applied. This plan is then modified to account for asymmetric orientation of the applicators (either Fletcher-Delcos-Suit or ring and tandem) and/or unfavorable positioning of the OAR with respect to the applicators. Customization was accomplished by varying the loading patterns, particularly of the vaginal applicators, to modify the shape of the isodoses to avoid the OARs and consequently reduce the likelihood of significant normal tissue toxicity. OAR avoidance was quantified by means of dose volume constraints computed based on the ABS and GEC-ESTRO guidelines [2-4].

The total dose to both point A and the OAR is derived from a combined external beam radiation (EBRT) and brachytherapy regime (25 fractions of 1.8Gy EBRT and 4 fractions of 7 Gy from brachytherapy). To facilitate dose comparisons when dealing with two very different dose rates, "isoeffective" doses are used. These are defined as the sum of the biologically effective dose (BED) for each phase of treatment normalized to the BED for a 2Gy per fraction treatment (α/β = 3 Gy for OAR and α/β = 10 Gy for point A). Based on this, we aimed to keep the maximum dose received by a contiguous 2 cm^3 volume (D_{2cc}) of the bladder to < 90 Gy_3 while for the rectum the D_{2cc} limit was 75 Gy_3.

Our prescription resulted in an isoeffective dose of 84 Gy_{10} to point A. If the OAR constraints could not be met, the physician either lowered the prescription dose or accepted the OAR dose based on clinical indications. Following planning, we prospectively record the average dose delivered to point A, the OAR dose points based on ICRU 38 [9], the D_{2cc} for bladder and rectum as well as data regarding the dose received by the sigmoid and small bowel. This data is being collected for future correlations with outcomes and complications. The average isoeffective doses achieved for point A and the D_{2cc} for each of the bladder and rectum for our first 38 patients are displayed in Table 1. These values indicate that we are achieving our dosimetric goals. Our data also compares favourably to data from

(Continued on page 113)

(Continued from page 112)

groups using full MRI based planning [5].

	Isoeffective Dose
Point A	81±6 Gy_{10}
D_{2cc} Bladder	89±10 Gy_3
D_{2cc} Rectum	63±8 Gy_3

Table 1: Average dosimetric values for the first 38 patients treated with CT-based planning

Thus, imaging technologies that are readily available in most radiotherapy departments can be combined to produce a smooth and efficient workflow for HDR brachytherapy for cervix cancer. The use of routine transabdominal US to guide intrauterine tandem placement provides real-time feedback regarding the accuracy of tandem placement and the choice of applicator geometry. We have demonstrated that this can be practically integrated in a cervix brachytherapy practice without extra-departmental consultation. Use of US imaging reduces insertion time and eliminates the risk of uterine perforation or suboptimal tandem placement and, therefore, improves both implant geometry and workflow efficiency. Furthermore, CT-based planning allows for clinical modification of the classic pear shaped distribution while effectively protecting the OAR.

REFERENCES

[1] Corn BW *et al.* Technically accurate intracavitary insertions improve pelvic control and survival among patients with locally advanced carcinoma of the uterine cervix. *Gynecol Oncol* 1994;53:294-300.

[2] Haie-Meder C *et al.* Recommendations from Gynaecological (GYN) GEC-ESTRO working group (I): concepts and terms in 3D image based 3D treatment planning in cervix cancer brachytherapy with emphasis on MRI assessment of GTV and CTV. *Radiother Oncol* 2005;74:235-245.

[3] Potter R *et al.* Recommendations from gynaecological (GYN) GEC ESTRO working group (II): concepts and terms in 3D image-based treatment planning in cervix cancer brachytherapy-3D dose volume parameters and aspects of 3D image-based anatomy, radiation physics, radiobiology. *Radiother Oncol* 2006;78:67-77.

[4] Nag S *et al*. Proposed guidelines for image-based intracavitary brachytherapy for cervical carcinoma: report from Image-Guided Brachytherapy Working Group. *Int J Radiat Oncol Biol Phys* 2004;60:1160-1172.

[5] Kirisits C *et al.* Dose and volume parameters for MRI-based treatment planning in intracavitary brachytherapy for cervical cancer. *Int J Radiat Oncol Biol Phys* 2005;62:901-911.

[6] Barnes EA *et al*. Prospective comparison of clinical and CT assessment in detecting uterine perforation with intracavitary brachytherapy for carcinoma of the cervix. *Int J Gynecol Cancer* 2007;17:821-826.

[7] Davidson MTM *et al*. Optimization of high-dose rate cervix brachytherapy applicator placement: The benefits of intraoperative ultrasound guidance. *Brachytherapy* 2008;7:248-253.

[8] Viswanathan AN *et al.* CT vs MRI-based contouring in cerical cancer brachytherapy: results of a prospective trial and preliminary guidelines for standardized contours. *Int J Radiat Oncol Biol Phys 2007;68:491-498.*

[9] International Commission on Radiation Units and Measurements. ICRU report 38: Dose and volume specification for reporting intracavitary brachytherapy in gynaecology. *ICRU* 1985:1-16.

[10] Fellner C *et al.* Comparison of radiography and computed tomography-based treatment planning in cervix cancer in brachytherapy with specific attention to some quality assurance aspects. *Radiother Oncol* 2001;58:53-62.

[11] Katz A and Eifel PJ. Quantification of intracavitary brachytherapy parameters and correlation with outcome in patients with carcinoma of the cervix. *Int J Radiat Oncol Biol Phys* 2000;48:1417-1425.

Proposed Changes to COMP Bylaws (2009 AGM)

The below document summarizes all changes brought forth by the COMP Bylaws Subcommittee in time for this year's meeting. All amendments are highlighted in red (underlined) font. Please review the proposed changes and be prepared for the vote at the AGM.

ARTICLE III: Membership
Make eligibility criteria more general for the Associate Member category.

Change from:
ELIGIBILITY AND RIGHTS OF ASSOCIATE MEMBERS

Physical scientists or engineers not eligible as Full Members may apply as Associate Members.

These individuals become Associate Members after approval by the Board and upon payment of Associate Members' annual dues.

Associate Members can keep their membership as long as they not become eligible as Full Members.

Associate Members are invited to the General Meetings but are not allowed to vote.

To:
ELIGIBILITY AND RIGHTS OF ASSOCIATE MEMBERS

Individuals with interest in the objectives of COMP but not eligible for any other membership status may apply as Associate Members.

These individuals become Associate Members after approval by the Board and upon payment of Associate Members' annual dues.

Associate Members can keep their membership as long as they do not become eligible for another membership status.

Associate Members are invited to the General Meetings but are not allowed to vote.

ARTICLE IV: Officers
Wording of the title Chair and Chairperson title to the title President (total of 21 occurrences in the bylaws)
Wording of the title Executive to the title Board (total of 43 occurrences in the bylaws)
Add SEC and RSTSAC chairs into COMP Board
change requirement from 50% to 4 of officers certified by CCPM

Change from:***;***

A) OFFICERS OF THE EXECUTIVE

The officers of the Executive of this organization shall be

1) Past Chairperson
2) Chairperson
3) Chairperson-elect
4) Secretary
5) Treasurer
6) Councillor (for Communications)
7) Councillor (for Professional Affairs)
8) President of CCPM

At least 50% of the above officers will be certified by CCPM.

To:***;***

A) OFFICERS OF THE BOARD

The officers of the Board of this organization shall be

1) Past President
2) President
3) President-elect
4) Secretary
5) Treasurer
6) Councillor (for Communications)
7) Councillor (for Professional Affairs)
8) Chair of Science and Education Committee
9) Chair of Radiation Safety Technical Standards Advisory Committee
10) President of CCPM

At least 4 of the above officers will be certified by CCPM.

ARTICLE IV: Officers
re: B) ELECTION OF OFFICERS

typo *art* to *part*
change wording for CCPM representation on Board to be consistent with changes in part IV A)

Change from:

6. If more than one nomination is received by the nominating committee, election of officers will be made by letter ballot according to article X. Ballots will be counted sequentially for positions 3) to 7) in art. IV A). The highest number of votes for each position will determine the elected officer except for the case when this would mean that a fourth non CCPM member would become a member of the committee. In this case the CCPM member with the highest number of votes would be elected. The ballot counting will be done by the past-chairperson (also chairperson of the nominating committee) or a delegate (s)he appoints, plus one other Full Member of the organization. The past-chairperson or appointed delegate will count the ballots and report to the Chairperson at/or prior to the Annual General Meeting where (s)he will announce the results.

To:

6. If more than one nomination is received by the nominating committee, election of officers will be made by letter ballot according to article X. Ballots will be counted sequentially for positions 3) to 7) in part. IV A). The highest number of votes for each

(Continued on page 115)

Bylaws… continued

(Continued from page 114)

position will determine the elected officer except for the case when this would leave fewer than four CCPM members on the Board, in which case the CCPM member with the highest number of votes would be elected. The ballot counting will be done by the past-President (also chairperson of the nominating committee) or a delegate (s)he appoints, plus one other Full Member of the organization. The past-President or appointed delegate will count the ballots and report to the President at/or prior to the Annual General Meeting where (s)he will announce the results.

ARTICLE IV: Officers

inclusion of electronic records as recording option for secretary

inclusion of duties of Chairs of SEC and RTSAC

re: C) DUTIES OF OFFICERS
3rd paragraph

Change from:
The Secretary shall act as clerk recording all proceedings in the books kept for that purpose. (S)He shall give or cause to be given notice of all meetings of the members and of the Board and shall perform such other duties as may be prescribed by the Board. (S) he shall also perform such other duties as may from time to time be determined by the Board.

To:
The Secretary shall act as clerk recording all proceedings in the books / electronic records kept for that purpose. (S)He shall give or cause to be given notice of all meetings of the members and of the Board and shall perform such other duties as may be prescribed by the Board. (S)he shall also perform such other duties as may from time to time be determined by the Board.

Append:
The Chair of the Science and Education Committee will be responsible for ensuring that the committee carries out its mandate. S(he) should advise, counsel and report matters relating its mandate to the other Board Members.

And

The Chair of the Radiation Safety Technical Standards Advisory Committee will be responsible for ensuring that the committee carries out its mandate. S(he) should advise, counsel and report matters relating its mandate to the other Board Members.

c2.ARTICLE VIII: FINANCES (delete statement C));

From:

Cheques, certificates and other bank transactions shall be signed by the officers specified in article IV F.

The financial year of the COMP shall end on the last day of the calendar year (December 31).

The profits or losses of Canadian Medical Physics Scientific Meetings and special educational symposia will be shared between COMP and CCPM in the same proportion as the COMP membership fees.

The members shall at each annual meeting appoint an auditor to audit the accounts of the organization for report to the members at the next annual meeting

CCPM will be guaranteed financial support within COMP to maintain its activities related to certification and continuing education

To:

Cheques, certificates and other bank transactions shall be signed by the officers specified in article IV F.

The financial year of the COMP shall end on the last day of the calendar year (December 31).

The members shall at each annual meeting appoint an auditor to audit the accounts of the organization for report to the members at the next annual meeting

CCPM will be guaranteed financial support within COMP to maintain its activities related to certification and continuing education

re: ARTICLE X: Voting By Letter Ballot
Make article more consistent for electronic voting.
Make reminder notice timing more specific.

Change from:
ARTICLE X: Voting By Letter Ballot
Whenever required by these bylaws, or at option of the Executive, the Full Members may exercise their voting rights by letter ballot except where the Canadian Corporations Act requires a meeting. All ballots shall be sent by ordinary mail or electronic means to Full Members by the Secretary of the Association and shall be returnable not less than thirty (30) days from the date of mailing. Ballots will be counted by the Secretary unless otherwise specified in this bylaw in the presence of at least one other Full Member of the Association and the Secretary shall report the results of such ballot to the chairperson, who shall forthwith inform the membership of such results. All Questions shall be determined by a clear majority of all properly completed ballots that are returned within the time prescribed unless otherwise specifically provided by the Canada Corporations Act or by this bylaw.

To:
ARTICLE X: Voting By Letter or Electronic Ballot
Whenever required by these bylaws, or at option of the Board, the Full Members may exercise their voting rights by letter or electronic ballot except where the Canadian Corporations Act requires a meeting. All ballots shall be sent by ordinary mail or electronic means to Full Members by the Secretary of the Association and shall be returnable not less than thirty (30) days from the date of mailing. A reminder notice will be sent fifteen (15) days **prior** to the response deadline. Ballots will be counted by the Secretary unless otherwise specified in this bylaw in the presence of at least one other Full Member of the Association and the Secretary shall report the results of such ballot to the President, who shall forthwith inform the membership of such results. All Questions shall be determined by a clear majority of all properly completed ballots that are returned within the time prescribed unless otherwise specifically provided by the Canada Corporations Act or by this bylaw.

COMP Winter School

January 24-28, 2010

Banff Park Lodge

Mark your calendars and stay tuned for more details!

A New COMP Award?

The COMP executive would like to propose the creation of a designation that acknowledges those within our membership who have made a significant contribution to the field of medical physics and to the COMP (the criteria for which are outlined below).

To this end we are proposing the use of either 1) Fellow of COMP (FCOMP) *or* 2) Member of Distinction (DCOMP). The criteria currently includes both designations and will be modified based on the results of the vote.

We are asking the membership to vote on the 2 questions below:

1) Should the Canadian Organization of Medical Physics institute an award which acknowledges those within our membership who have made a significant contribution to the field of medical physics and to the COMP according to the criteria attached? Y/N
2) Which designation do you prefer? **Fellow (FCOMP)** or **Member of Distinction (DCOMP)**

An electronic vote is being sent out to the membership in June..Please exercise your right to vote.

The results of the vote will be disseminated at the 2009 Annual General Meeting on July 23.

Thank you for your participation.

Jason W. Schella, MSc, FCCPM
Chair, COMP

Conference Report of "Innovative approaches in Radiotherapy: beyond tomorrow", Riyhadh Saudi Arabia

Submitted by: Michael Evans, FCCPM
McGill University Hospital, Montreal, QC

In March this year (2009) I attended a conference in Riyadh, the capital city of the Kingdom of Saudi Arabia, entitled "Innovative approaches in Radiotherapy: beyond tomorrow". The conference ran over the course of 4 days and was held in the King Faisal Specialist Hospital and Research Centre. The event was organized by the Biomedical Physics Department, the Oncology Centre, and the Research Centre's Training and Education Departments, and in collaboration with the King Abdulaziz City for Science and Technology. Co-chair organizers of this event were Dr. Mohammad Al-Shabanah, (Head, Radiation Oncology) and Dr. Belal Moftah (Chairman, Biomedical Physics Department).

Michael Evans, Belal Moftah(organizer), Charlie Ma and Rock Mackie

Attended by almost 450 participants, the meeting was billed as a "three-in-one" conference. Notably the conference presented 7 main plenary sessions, 7 continuing education courses, as well as 7 hands-on workshops held in the cancer centre. I was most fortunate to have been invited to participate as a lecturer at all three levels of this conference.

While most attendees seemed to be from regional cancer centres, the invited speakers consisted of an international cross section.

Kingdom Tower (hotel is on floors 32 - 46 of the 100 storey hotel)

Included in this list were John Adler (USA), Andres Brahme (Stockholm), Luca Cozzi (Italy), Michael Evans (Canada), Jay Flanz (Boston), Michael Kopp (Vienna), Charlie Ma (Philadelphia), Rock Mackie (Madison – but lets claim him from Canada as well!), Helen Shih (Boston), Herman Suit (Boston – attended by internet), Feng Wu (Oxford UK), and Konstantin Zakaryan (Florida). All of these international lecturers, along with the participation of local experts participated in plenary lectures and continuing education courses. At the end of the formal lecture series of the conference on the fourth day many also went on to the hands-on portion of the conference.

One of the principal themes of the conference centered around the use of particle therapy for cancer treatment, with particular emphasis on the use of proton and heavy ions. In addition the venue was an opportunity for the cancer centre at the King Faisal Specialist Hospital and Research Centre to demonstrate it's acquisition of IMRT and IGRT technology including a newly installed Cyberkinfe, Tomotherapy unit, and Varian RapidArc treatment units. It is possible that this is one of the few cancer centres in the world with all three modalities. The conference was also an occasion for the local administration to announce its commitment to funding and building a particle therapy centre. The cancer centre is very well funded, and the hospital has access to equipment and expertise which put it on a level with other international cancer centers. It even has its own Cobalt sterilizer using good-old Canadian technology.

As a westerner who had never visited the Kingdom of Saudi Arabia it was a most interesting experience for me. There were many cultural differences and customs that were new to me, and the hospitality and professional courtesy with which I was treated was genuine. International speakers were located in the hotel section of the Kingdom Tower, a 100 storey building located about 6 km from the hospital city complex. A most remarkable building – just google it to get a sense of its dominance of the city. A wonderful series of evening event were organized for participants to visit the National Museum, the Prince's Palace and other locations of interest following the day's events. On the second day a sandstorm swept through Riyadh, lasting about 6 hours, and virtually shutting down everything – also a most unusual experience that was somewhat similar to a Canadian's thoughts of a snow blizzard.

(Continued on page 118)

Sandstorm taken from hotel

(Continued from page 117)

One afternoon Drs Demirkaya and Khafaga took a few of us out to see the desert – a short ride out of the city. It is truly amazing to see how this society has flourished in the middle of a very arid region – it seems that most water is pumped in from a few hundred kilometers away and desalinated. As well, one evening Dr Moftah took me downtown to visit the central market and the main mosque. This was also an interesting experience and I had many open conversations with local residents who wanted to practice their English.

On the holy day (Friday) there was very little activity in the city – however I did manage to find a small golf course at one of the hotels in the city. On one hole my traditional hook shot went over a guarded compound, whereby a very pleasant armed guard appeared over the fence and smilingly threw my ball back. This was followed two holes later by my similarly impressive slice which managed to take down one of the greenskeepers in his golf cart – just another day on the links for me!

Both professionally and personally this was a wonderful experience – and I certainly had the impression that medical physicists in Riyadh are like those everywhere else: committed medical professionals with a keen interest in promoting their profession and improving the lot of cancer patients with their skill and knowledge. I hope other Canadian medical physicists have a similar opportunity to experience these stimulating types of interactions.

Making friends with a camel and a Bedouin

Riyadh mosque

Did you know…

InterACTIONS is published four times a year:
January , April, July, October

Submission deadlines for each issue are:
December 1, March 1, June 1, September 1

Next deadline for the October issue
is September 1st!

Get your material in early!

News from CAMPEP

Submitted by: Ervin Podgorsak & Gino Fallone
McGill University Hospital, Montreal and Cross Cancer Institute, Edmonton

The Commission on Accreditation of Medical Physics Educational Programs (CAMPEP), Inc. is a nonprofit organization whose objectives are the review and accreditation of academic, residency, and continuing education programs in medical physics. It is sponsored by four North American organizations: the American Association of Physicists in Medicine (AAPM), the American College of Medical Physics, the American College of Radiology (ACR), and the Canadian College of Physicists in Medicine (CCPM). The Commission is governed by a Board of Directors, currently consisting of two representatives from each of the four sponsoring organizations: W.R. Hendee and R.L. Maughan from the AAPM; J.D. Hazle and T.D. Solberg from the ACMP; G.D. Clarke and C.W. Coffey from the ACR; and B.G. Fallone and E.B. Podgorsak from the CCPM. The directors serve 3 year terms, which can be renewed once, and elect a President (currently: J.D. Hazle), Vice President (currently: T.D. Solberg), and Secretary/Treasurer (currently: G.D. Clarke).

The Commission has three review committees: Graduate Education Program Review Committee – GEPRC (current chair: E. Jackson); Residency Education Program Review Committee – REPRC (current chair: B. Gerbi), and Continuing Education Program Committee – CEPC (current chair: B. Thomadsen). Currently, 21 academic graduate programs (of these 5 (24 %) in Canada) and 31 residency education programs (of these 7 (23 %) in Canada) are accredited by the CAMPEP.

The AAPM has always been very supportive of the CAMPEP and this arrangement has recently been strengthened with a formal CAMPEP – AAPM services agreement whereby the AAPM for a modest fee provides administrative support to the CAMPEP. This arrangement allows the CAMPEP to function better as an accrediting body and comes with no increase in accreditation fees.

The CAMPEP board of directors meets at least twice each year, typically during the summer AAPM meeting and during the November meeting of the Radiological Society of North America (RSNA). During the past few years the Board has also been organizing a spring retreat meeting in Houston, TX to discuss various urgent issues and plans for the future of the CAMPEP. Two important issues discussed at length during recent CAMPEP board meetings were the 2012 and 2014 ABR deadlines which, without doubt, have serious implications for the future of the North American medical physics profession as well as for students entering medical physics educational programs.

Medical physics is not only a scientific discipline, it is also a medical subspecialty regulated by professional certification exams.

Medical physics is not only a scientific discipline, it is also a medical subspecialty regulated by professional certification exams. In Canada the certification exams for medical physicists are conducted by the CCPM, a nonprofit professional organization run by medical physicists for medical physicists. In the U.S. the medical physics certification exams are conducted by the American Board of Radiology (ABR) which is one of 24 specialty boards under the umbrella of the American Board of Medical Specialties (ABMS). The vast majority of the ABMS affiliated boards require that their certification exam candidates have completed their specialty education in accredited programs. A notable exception to the link of certification with education program accreditation is the ABR certification exam in medical physics and, to rectify this anomaly, the ABR physics trustees in 2002 passed the so-called 2012 resolution and in 2007 strengthened it with the so-called 2014 resolution.

...the ABR physics trustees in 2002 passed the so-called 2012 resolution and in 2007 strengthened it with the so-called 2014 resolution.

In short, the 2012/2014 resolutions state that after 2012 all candidates admitted to the ABR certification exam will have to have completed either a CAMPEP- accredited academic program in medical physics or a CAMPEP-accredited residency program in medical physics. The 2014 deadline does not mention academic programs; however, it stipulates that ABR candidates will have to be enrolled in or have completed a CAMPEP-accredited residency program in medical physics.

While the 2012/2014 resolutions are sensible in principle, they pose two significant problems as the deadlines approach...

CAMPEP accreditation of an academic program implies that the program covers the didactic components prescribed by the AAPM TG 79 report; CAMPEP accreditation of a residency program implies that the program covers the clinical requirements prescribed by the AAPM TG 130 report. While the 2012/2014 resolutions are sensible in principle, they pose two significant problems as the deadlines approach: (1) the current number of available CAMPEP-accredited residency positions meets only about 20 % of actual needs and (2) the sole requirement of residency accreditation in the 2014 resolution seems to make accreditation of academic programs and the requirements of the AAPM TG 79 report of less importance even though the AAPM TG 130 report contains an explicit statement that a resident shall master the didactic requirements spelled out in the AAPM TG 79 report.

The CAMPEP was not involved with writing the resolutions; however, it plays an active role in mitigating the problems that they cause. For example, the CAMPEP is strongly supporting opening of new medical physics residency programs, it is streamlining the accreditation procedures to encourage accreditation applica-

(Continued on page 120)

The CAMPEP was not involved with writing the resolutions; however, it plays an active role in mitigating the problems that they cause.

(Continued from page 119)
tions from non-accredited programs, and it is clarifying entry requirements to CAMPEP-accredited graduate and residency programs.

During its spring 2009 meeting the CAMPEP board adopted the following clarification of undergraduate requirements for entry into CAMPEP-accredited graduate and residency programs:

"*Effective immediately, students entering a medical physics educational program shall have acquired a strong foundation in basic physics. This should be documented by either a degree in physics or a degree in related engineering or physical science with coursework equivalent to a minor in physics (includes at least three upper level undergraduate physics courses). If applicants with deficiencies in their physics background are conditionally admitted to the program, the provision for remedial education in physics shall be provided, documented and described in the self-study."*

The looming deadlines promise to make the next few years turbulent for medical physicists and the medical physics profession.

The CAMPEP board also adopted the following requirement with regard to entry requirements to CAMPEP-accredited residency programs: *Effective July 1, 2010 CAMPEP will require that the didactic components of the AAPM TG Report 79 (or its successor) shall be completed in a CAMPEP accredited graduate program prior to the candidate beginning the two-year clinical training in a CAMPEP-accredited residency program".*

The looming deadlines promise to make the next few years turbulent for medical physicists and the medical physics profession. Much of the turbulence will be caused by forces beyond control of medical physicists, such as, for example, the impending reorganization of health care in the U.S. However, a significant amount of turbulence will be self-inflicted and the decisions we make now and the directions we take now will have far reaching consequence not only for us but also for our colleagues far in the future. Serious discussions of important issues must take place to insure that the profession moves in a direction that will be appropriate for us and appreciated by our colleagues in the future.

Serious discussions of important issues must take place to insure that the profession moves in a direction that will be appropriate for us and appreciated by our colleagues in the future.

Ervin B. Podgorsak
B. Gino Fallone
May 25, 2009

(Continued from page 101)
Cancer Centre of South Eastern Ontario; The Ottawa Hospital Cancer Centre; CHUM-Hôpital Notre-Dame; Jewish General Hospital, Montreal; McGill University Health Centre; Centre Hospitalier Régional de Trois-Rivières; Centre Hospitalier Universitaire de Québec; CSSSC Chicoutimi; Dr Leon-Richard Oncology Centre (Moncton); Nova Scotia Cancer Centre; PEI Cancer Treatment Centre.

Dates to Remember

June 14, 2009
Extracranial Radiosurgery Symposium
Winnipeg MB

June 13-17, 2009
SNM
Toronto ON

June 23-27, 2009
CARS 2009: Computer Assisted Radiology and Surgery
Berlin, Germany

June 24, 2009
Quality Assurance procedures for PET/CT and SPECT/CT
Malmo, Sweden

June 25-26, 2009
AAPM Summer School: Clinical dosimetry measurements in radiotherapy,
Colorado College, USA

July 21- 24, 2009
2009 COMP Annual Scientific Meeting and CCPM Symposium
Victoria, B.C.

July 26-30 2009
2009 AAPM Annual Scientific Meeting
Anaheim, CA

September 1, 2009
Deadline for July submission to InterACTIONS

Sept 7-18, 2009
World Congress– Medical Physics and Biomedical Engineering
Munich, Germany

Sept 30-Oct 3, 2009
CARO
Quebec City , QC

ASTRO 2009
November 1-5, 2009
Chicago, IL

Nov 29-Dec 4, 2009
RSNA Annual Meeting
Chicago, IL

COMP Winter School
January 24-28, 2010
Banff, AB

COMP ASM
June 16-20, 2010
Ottawa ON

COMP OCPM

56th ANNUAL

SCIENTIFIC MEETING & CCPM SYMPOSIUM

June 16 - 20, 2010
Crowne Plaza Hotel
Ottawa, ON

Mark your calendars and stay tuned for more details!

Editors Note

Submitted by: Parminder S. Basran
Vancouver Island Cancer Centre, Victoria BC

Well I was happy to finally land on my feet on the west coast after a month or so of some spotty bad luck in Toronto. But I've landed and I'm ready for COMP 09, here at 'home', just in time to rattle off another COMP Newsletter!

This job is fulfilling in the sense that the work that goes into the Newsletter is appreciated (by most), and that the newsletter is perhaps our most important vehicle for keeping our members in touch with goings-on within COMP and the CCPM. Hopefully, the COMP membership and executive will find even more efficient ways to keep our members well informed. Even over the span of 3 years, the way our membership access information from COMP has changed: likely we will seek more efficient use of the already handy COMP website.

I want to say 'thanks' for the regulars who continue to send material, particularly those who are not *obligated* to send material to the newsletter [insert Fist-Bump Here].

I guess it is quite fitting that I should complete my editorial responsibilities after completing a move across the country. Apart from the wife, kids and a few personal belongings, most everything else is either 'left behind' or 'new', except for my involvement with newsletter. I am happy to report that **Idris Elbakri** from Manitoba has volunteered for the position of the COMP Newsletter Editor. While I'm sure he will do a first-rate job, I have offered to help him out from time to time, so you ain't seen the back of me just yet. I guess I, like my predecessors, can't really shake off involvement with the newsletter once becoming Editor.

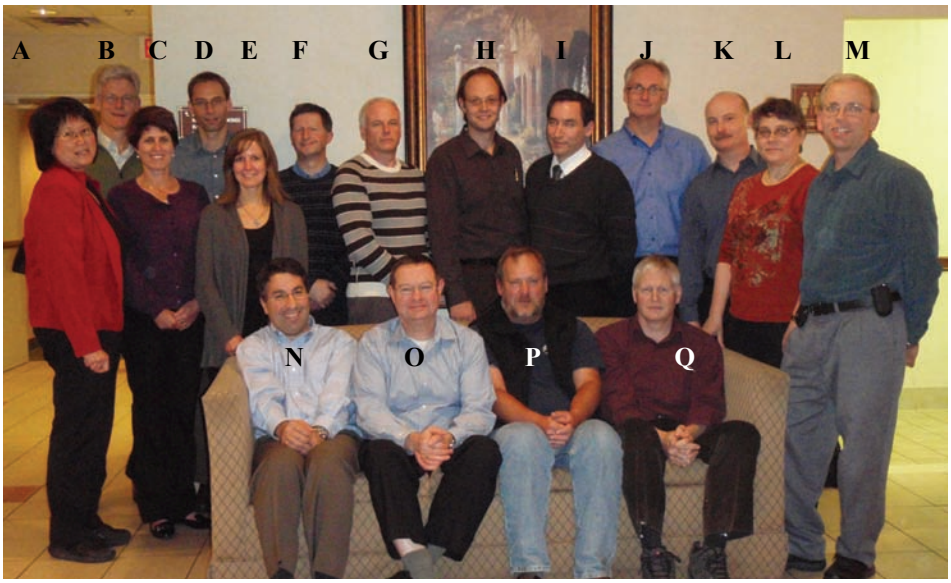
One final note, particularly for the younger COMP members out there: I remember the days when I was a medical physics graduate student, going to COMP or AAPM, feeling a bit overwhelmed by the experience. In fact, it really wasn't all that long ago. Don't feel that someone else is responsible for making COMP as good as it can be. This is a responsibility that we should all take on collectively. So, make sure you go to the meetings, go to the COMP AGM if you are a member, say hi to the COMP and CCPM executives (see picture!). They're really not that scary and if they still scare you, find me and I'll introduce you to them (and perhaps I'll introduce *myself* to them too!).

But most importantly, volunteer to write something up for the newsletter. This newsletter is as good as *you* want it to be.

So, may your glass always be full and take care of yourself and each other. See you all in Victoria!

Parminder S. Basran
COMP Newsletter Editor

COMP / CCPM Mid-year meeting



A = Sherry Connors (CCPM Sec/Treasurer)
B = Dick Drost (CCPM President)
C = Nancy Barrett (Executive Director)
D = Patrick Rapley (COMP Secretary)
E = Michelle Cottreau (COMP Communications)
F = Stephen Pistorius (Past COMP Chair)
G = Joseph Hayward (COMP Professional Affairs)
H = Jason Schella (COMP Chair)
I = Peter McGhee (Chair Elect)
J = William Ziegler (COMP Treasurer)
K = Darcy Mason (CCPM Board Member)
L = Maryse Mondat (previous COMP Treasurer)
M = Robert Corns (CCPM Deputy Chief Examiner)
N = Marco Carlone (COMP Science/Education)
O = David Wilkins (CCPM Vice President)
P = Wayne Beckham (CCPM Registrar)
Q = Michael Evans (CCPM Chief Examiner)

Have you ever wondered " *Hmmm... I wonder who the COMP Chair Elect is and what he/she looks like?* Well, wonder no more! Here is a picture from the mid-year meeting, and their names too! So, next time you are at COMP, make sure you print this page out so you can put a name to the face!

STANDARD IMAGING

RT Workspace™ Software

WORKFLOW MANAGEMENT

NEW SOFTWARE DESIGNED BY AND FOR BUSY RADIATION THERAPY PROFESSIONALS

RT Workspace software allows you to focus on providing high quality care for patients by streamlining the multi-step treatment planning process.

At a glance, everyone on your team has easy access to the secure RT Workspace database. Whiteboards, sticky notes and to-do lists are computerized, notifying team members electronically when it's their turn to complete assigned tasks. Less revenue is lost due to interruptions and workflow errors.

"I honestly think RT Workspace has improved the quality of care we are able to provide at this clinic."
– Candace Bletscher, MS

"RT Workspace is my personal work organizer … after using it, I feel like I can't work without it."
– Michele Wolfe, CMD

"With RT Workspace I don't have to keep calling our dosimetrists and physicists … I don't know how clinicians can live without it."
– Jon Stella, MD

To learn more visit:
rtworkspace.standardimaging.com

1271-20, 04/09

ADVANCING EFFICIENCY

The Standard Imaging MAX 4000 Electrometer is one of the most trusted and widely used electrometers around the world today. For nearly ten years, its dependable performance, portable, light weight form-factor, and ease of use have served as symbols of our commitment to increase your efficiency and throughput and simplify your workflow. Each Standard Imaging product is developed to help you make the most of every busy day.

800-261-4446 LOCAL **608-831-2202**
www.standardimaging.com

ADVANCING RADIATION QA™

"A healthy person has many wishes, but the sick person has only one." – *Indian Proverb*

CURE Foundation

CURE Foundation's mission is to keep the healthy person healthy. Should a person become sick, the goal is early detection, effective treatment and total cure — TOTAL HEALTH™.

World population is increasing by more than 100 million per year. To meet the needs of our aging and growing population, CURE Foundation is committed to making quality healthcare affordable and accessible globally.

"Everyone deserves the best healthcare. Education is the most effective way to eliminate poverty and promote global understanding and peace."

– Krishnan Suthanthiran

CURE Foundation is pleased to accept donations of diagnostic/therapeutic equipment and instruments or purchase them at a fair price.

cure FOUNDATION

www.cure.lu 703 451 4860