



20 September 2011

Ms Sylvia Kidziak AM
Chairperson
Radiation Health & Safety Advisory Council

Dear Sylvia,

Thank you for Council's advice on Medical Radiation that was prepared following the 14-15 April 2011 meeting of Council which discussed the use of ionizing radiation in medicine. I received this advice on 25 July 2011 and have now had time to consider my response fully, taking into consideration the discussions that I had with Council on this matter at the meeting of 11-12 August 2011.

The advice from Council made a number of general comments based on the forum and focussed on four areas of interest;

- Incident reporting;
- Integration of medical radiation into total patient care planning;
- Optimisation of dose in medical radiation; and
- Training Education and New technology.

I have attached detailed responses to each of these matters and recommendations made by Council and have identified where ARPANSA may take these matters into consideration when planning our work for 2011 – 2012 and beyond. I would be happy to discuss these responses further with Council, if required, at its meeting on 30 November – 1 December 2011.

Thank you again for Council's advice, which will be very helpful in consideration of medical radiation issues in Australia. Please note that your advice and my response will be made public by placing them on the ARPANSA web site.

Yours sincerely

A handwritten signature in black ink, appearing to read 'Carl-Magnus Larsson'.

Carl-Magnus Larsson
CEO of ARPANSA

Response to Council's Advice to the CEO of ARPANSA on Medical Radiation

Background

In November 2004 the then CEO of ARPANSA, Dr John Loy, requested the Radiation Health and Safety Advisory Council (Council) to consider possible future developments over the next 10 years in the use of ionizing radiation in medicine in Australia and the challenges this may pose for radiation protection. In May 2006 Council provided their first advice to the CEO on the issue of medical radiation. Council made seven recommendations to which Dr Loy responded.

During the course of the current 2009-2011 triennium Council has aimed to keep informed of medical radiation issues as the largest dose of ionizing radiation that any Australian is likely to receive will arise from medical procedures and the field of medical radiation continues to move rapidly forward due to continuous advances in technology, new modalities and resulting changes in medical practices.

At the Council meeting on 14-15 April 2011 a forum was hosted that discussed the use of ionising radiation in medicine. Council's consideration of medical radiation issues after this forum resulted in further Advice to the CEO on the medical radiation. This Advice concentrates on the four key areas:

- Incident reporting,
- Integration of medical radiation into total patient care planning,
- Optimisation of dose in medical radiation,
- Training Education and New technology.

My responses to Council's comments and recommendations are provided below.

Incident reporting

ARPANSA is responsible for the implementation and management of the Australian Radiation Incident Register (ARIR). The objectives of the ARIR are:

- To highlight, for radiation protection authorities and users of ionizing radiation and non-ionizing radiation, specific sources, causes or procedures which give rise to a potential hazard;
- To act as a national focus for information on ionizing radiation incidents and accidents;
- Through appropriate publications, to provide feedback and guidance to users of radiation on preventing or limiting the consequences of radiation accidents; and
- To provide useful data and reports to regulatory bodies, and other advisory responsibilities.

A national radiation incident reporting framework, as specified in Schedule 13 of the *National Directory for Radiation Protection* (NDRP) has been adopted by regulators from all jurisdictions through the Radiation Health Committee (RHC). This includes standard reporting protocol (forms, incident definitions and practices) that are implemented through the ARIR. The RHC agreed at the July 2011 meeting to review Schedule 13 of the NDRP. This will include the basic definitions for the types of incidents to be reported to the ARIR. ARPANSA facilitates this process, but cannot direct the outcome.

The multiple reporting systems of regulatory or professional origin have different purposes and seek different outcomes. To the extent that those outcomes align with the ARIR, ARPANSA needs to engage the relevant stakeholders (e.g. Royal Australian and New Zealand College of Radiologists, RANZCR; Radiation Oncology Reform Implementation Committee, RORIC; and the Australian Patient Safety Foundation) to extract the appropriate information and to jointly support the ARIR.

Reporting is driven by professional culture and supported by underlying training. ARPANSA seeks

to enhance education of health care workers in radiation protection generally and this is likely to slowly change the reporting culture.

ARPANSA has recently established a Safety Analysis section as part of the ARPANSA Reform process. The Safety Analysis section will become responsible for the ARIR during 2011/12 to raise its profile to encourage greater reporting, but equally importantly to provide an expert group for the evaluation of data on collected reports to assess trends, systematic failures and root cause analysis.

Integration of medical radiation into total patient care planning

ARPANSA can see significant advantages in the full incorporation of medical radiation information into electronic patient histories. This generally aligns with the eHealth initiative which ultimately should reduce over-servicing and repeated procedures. In addition, it should also assist in avoiding injuries from multiple interventional procedures and therefore has the ability to reduce costs to Government and dose and injury associated with unnecessary and insufficiently planned procedures.

ARPANSA recognises the need to interact constructively with the professions, regulators and to have ongoing dialogue with other relevant parts of the Health portfolio including the Therapeutic Goods Administration (TGA), Health Workforce Australia, the Medical Benefits Division and Office of Health Protection as well as the committee structures that contribute to health planning. These interactions are the subject of current stakeholder engagement planning.

Education of the professions in radiation protection has already been mentioned. Improved understanding of radiation protection will necessarily include an understanding of the roles of key international organisations and the ways that documents generated by those organisations contribute to better health outcomes. ARPANSA will continue to provide information for public consumption on its website as it becomes available.

ARPANSA has identified Communication and Education as a Key Area in its new Strategic Directions framework. Resources to support this initiative are being allocated with the imminent appointment of a new Communication Officer to be followed with planned strengthening of the Medical Radiation Services Branch in this area.

Optimisation of dose in medical radiation

The Government has announced Medicare support for MRI funding. ARPANSA believes this will reduce the use of CT where MRI is the superior imaging modality but was previously limited in availability. Nevertheless, CT is often the appropriate modality and will continue to be strongly used. ARPANSA believes that referral guidelines should be used to help select those patients for whom the proposed diagnostic procedure is justified and influences the subsequent course of treatment. As discussed above, this requires constructive interaction with the professions. The development of referral guidelines is a professional responsibility and ARPANSA's role is limited to constructive engagement.

Optimisation of dose in medical radiations is already core business for ARPANSA. ARPANSA has commenced a national survey of diagnostic reference levels (DRLs) for computed tomography. Surveys of DRLs for interventional fluoroscopy, mammography, nuclear medicine and positron emission tomography are under development for implementation commencing in 2012. In relation to radiotherapy, ARPANSA holds the primary standards for absorbed dose and air kerma. Hospital radiotherapy dosimetry equipment is calibrated with the reference to ARPANSA's primary standards. In addition, ARPANSA now houses the new Australian Clinical Dosimetry Service which audits hospital performance in delivery of radiotherapy doses. Level 1 audits are currently underway and Level 2 and 3 audits will commence later in 2011.

Training Education and New Technology

ARPANSA is engaging with relevant Government agencies committed to the support and promotion of professionals in areas using medical radiations. As stated above, ARPANSA believes it has a role in improved radiation protection education. This may extend to assisting vocational information providers to inform University entrants of the rewarding careers offered in these professions, however training delivery and marketing are generally outside the Agency's remit. The need to substantially engage in training and promotion of professional health workers demands resources that are not currently available, but are planned for implementation as resources become available through the Reform process.

ARPANSA is interested in new and competing technologies but more often, novel uses of existing technology represent significant new risks for patients and practitioners. ARPANSA is unlikely to get knowledge of such advances before other health care sectors as we represent a small marketing opportunity. The large scale introduction of new technologies and novel applications of existing technologies are usually dependent on assessments by the TGA and other parts of the Health Portfolio. ARPANSA believes it is the appropriate part of Government to advise on radiation related technologies and plans constructive engagement with those who regulate the devices and fund clinical delivery.

As mentioned above, Communication and Education has been defined as a Key Area for ARPANSA. ARPANSA is currently examining how the recent Recommendations of the ICRP (ICRP 113) in the area of Education and Training in Radiological Protection for Diagnostic and Interventional Procedures can be implemented for Australian practice. Education in radiation protection needs to be improved at all levels from undergraduate students, continuing professional development for referers and for practitioners directly using radiation.

Carl-Magnus Larsson
CEO of ARPANSA
20 September 2011