Clinical Oncology 27 (2015) 325–329

Contents lists available at ScienceDirect

Clinical Oncology

journal homepage: www.clinicaloncologyonline.net

Short Report

The Development of Practice Standards for Radiation Oncology in Australia: A Tripartite Approach

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Received 6 August 2014; received in revised form 7 January 2015; accepted 8 January 2015

Abstract

In many areas of health care, practice standards have become an accepted method for professions to assess and improve the quality of care delivery. The aim of this work is to present the development of practice standards for radiation oncology in Australia, highlighting critical points and lessons learned. Following a review of radiotherapy services in Australia, a multidisciplinary group with support from the Australian Government developed practice standards for radiation oncology in Australia. The standards were produced in a multistep process including a nationwide survey of radiotherapy centres and piloting of the standards in a representative subset of all Australian radiotherapy centres. The standards are grouped into three sections: Facility management (covering staffing, data management, equipment and processes); Treatment planning and delivery (providing more detailed guidance on prescription, planning and delivery); Safety and quality management (including radiation safety, incident monitoring and clinical trials participation). Each of the 16 standards contains specific criteria, a commentary and suggestions for the evidence required to demonstrate compliance. The development of the standards was challenging and time consuming, but the collaborative efforts of the professions resulted in standards applicable throughout Australia and possibly further afield.

Key words: Accreditation; quality improvement; quality programme; safety; standards development

Introduction

Quality assurance is an important aspect of clinical oncology in general and includes the safe delivery of radiation therapy. Many documents exist that provide guidance on how to implement or conduct quality activities in this field [1–3]. However, most of these guidelines focus on one or a few aspects of the overall services, with technical issues often being the centre of attention [4,5]. As such, standards that capture the whole continuum of radiation therapy delivery from clinical documentation and treatment prescription to machine calibration and treatment delivery could be an important tool to provide guidance that can be adopted uniformly by all radiation therapy departments.

The need for standards was highlighted in a wide ranging review of radiation oncology services in Australia conducted in 2002 by P. Baume [6]. Similar reports, often unfortunately prompted by radiation accidents, are available from a variety of sources [7]. The Baume report identified a number of safety and quality issues affecting radiation oncology in Australia. One of the key tasks for the professions became the development of practice standards for radiation oncology that could inform and guide a quality

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http://dx.doi.org/10.1016/j.clon.2015.01.005
0936-6555/

programme in Australia. The aim of this report is to present the standards and briefly describe the process of their development, highlighting critical points and discussing lessons learned in the process.

Materials and Methods

Following the Baume report into radiation oncology in Australia [6], a Radiation Oncology Reform Implementation Committee (RORIC) was established with representation from all jurisdictions in Australia (state and federal government), a consumer representative and the three professions that make up the radiotherapy tripartite [radiation oncologists represented by the Royal Australian and New Zealand College of Radiologists (RANZCR); radiation therapists represented by the Australian Institute of Radiology and radiation oncology medical physicists represented by the Australasian College of Physical Scientists and Engineers in Medicine]. The Tripartite Committee in collaboration with the Quality Working Group of RORIC oversaw the process of standards development, which started in 2005 with a tender to develop the standards. This tender was won by RANZCR.

The development of the standards was conducted in two phases, as can be seen in Table 1, which lists the steps in the process of standards development. Building on an initial broad inclusive and consultative effort, the second consolidation phase was largely driven by a relatively small multidisciplinary team. The team consisted of members of the three professions, a professional experienced with accreditation and standards, a pathologist who had considerable experience in standards development in pathology and more generally in the health sector, and a representative of the Australian Government's Department of Health.

Throughout the process, consultation with stake holders took place through initial inquiry into existing practice [8], a broad review of a draft standards package and a pilot programme in sites selected through an expression of interest process. The pilot was designed to test, in a selected group of radiotherapy facilities, that the evidence can be collected as required and that an estimate of the cost and resources required to implement the standards throughout the country can be determined.

Results

As can be seen from Table 1, phase 1 of the process resulted in 16 standards with more than 300 indicators. As the standards were produced by different authors they displayed a variety of styles and approaches. These shortcomings were highlighted in two rounds of feedback from all stakeholders in 2007, about 2 years after the initial conception of the standards. Consequently, a smaller group was convened consisting of members of the main radiation oncology professions and additional experts, as summarised in the methods section. This group consolidated the standards and reduced the required evidence to 45 items.

The standards are listed in Table 2 and are grouped into three sections: Facility management; Treatment planning and delivery; Safety and quality management. Each of the 16 standards is headed by a key statement, which states the overall goal of the standard. This is expanded by listing the required benchmarking criteria (1 to 5 per standard, a total of 44), which describe key processes to attain the goal. They are supported by a brief commentary that provides references and assists in putting the standards into practice. For each standard, items of evidence are listed that describe what a radiation oncology facility is required to produce to demonstrate how well a standard has been met. The complete standards document, including all criteria, commentaries and required evidence, is available on the webpage of the RANZCR (www.ranzcr.edu.au).

Standards 14 (incident monitoring) and 15 (dosimetric intercomparison) are noteworthy as they rely on additional infrastructure which had not been in place at the time of initial publication of the draft standards in 2007. Incident monitoring is available in each Australian state, but no national system for radiation oncology monitoring is in place. An appendix was added to the standards to give an example for an incident reporting system based on the work by Arnold *et al.* [9].

Dosimetric intercomparisons have been available in Australia through international providers such as the International Atomic Energy Agency (IAEA) Thermoluminescence Dosimetry service [10] or through the Trans-Tasman Radiation Oncology Group in the context of clinical trials [11]. At least partially as a result of the work on the standards, the Australian Clinical Dosimetry Service was established in 2010 as a trial [12], allowing radiotherapy facilities to more easily comply with the requirements of standard 15.

The pilot evaluation was conducted by the Australian National Association of Testing Authorities in 14 sites selected to represent public and private facilities of different size and governance arrangements, scope (community/academic) and location (regional/metropolitan). It indicated that on average participating sites met about 75% of the required evidence for the standards, with the overall range of compliance being between 63 and 95%. Standard 4, data management, proved to have the lowest compliance rates during the pilot phase, with the major issue being documentation.

Discussion

The development of the standards has been a 6 year process and it would have been difficult to conduct it to conclusion without the financial support, administrative assistance and encouragement from the Australian Government's Department of Health. In hindsight, the process could have been significantly streamlined by tasking a small group of professionals directly with the development of the standards as per phase 2 of the present work. Regular