

INTRODUCTION

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1. Background

The International Atomic Energy Agency (IAEA) through its programme “Radiation Sterilisation of Tissue Grafts”, produced a distance learning package on the procedures involved in tissue banking, particularly in the application of radiation to sterilise tissues (Nather, 1999a; 1999b; Phillips and Strong, 1999; Nather, 2000a; 2000b; Phillips, 2000). The individual modules are: 0 — Historical Background; 1 — Rules and Regulations; 2 — Organisation; 3 — Quality Assurance; 4 — Procurement; 5 — Processing; 6 — Distribution & Utilisation; 7 — Future Developments in Tissue Banking. This curriculum has been used extensively throughout the Asia Pacific region itself, and in other regions such as Latin America, Africa and parts of Europe.

The IAEA draft curriculum was first piloted in Singapore during the IAEA/RCA Workshop on Tissue Banking in September 1995. Consequently, IAEA established a Regional Training Centre in the National University Hospital, Singapore to train tissue bank operators in the Asia Pacific region using the curriculum. Since then, the training centre has conducted several distance learning programmes for tissue-bank operators in the region.

To enable this development to proceed effectively, the Singapore Government (Ministry of Environment) provided a grant to the NUH Tissue Bank through the National Science and Technology Board to develop the centre to be equipped with facilities for hands-on training. This grant also provided for sufficient funds to convert the draft curriculum into a multimedia curriculum. The National

University Hospital provided the space in which the NUH Tissue Bank was constructed. Both NUH and NUS contributed renovation funds for the building of a purpose-built tissue bank with a reception area, documentation room, wet processing and dry processing laboratories as well as a library for resource materials in tissue procurement and processing, and in tissue transplantation.

Simultaneously, the National University of Singapore (NUS) approved the development of a one-year distance learning Diploma Course in Tissue Banking to be conducted by the NUH Tissue Bank at the NUS Training Centre. The syllabus for the Diploma Course basically consisted of three components: the multimedia curriculum on tissue banking, a basic sciences component and a recommended textbook — the book selected being the series *Advances in Tissue Banking*. With these three components together, a comprehensive training could be provided.

With funds from the Singapore Government in April 1998, a multimedia element could be introduced. This required further editing of text from draft to module and the editing of illustrative materials into video demonstrations of not more than 30 minutes each. Special box containers were designed to house each module to include a booklet, accompanying videotapes and illustrative case slides from the region and available reference texts. With the first module, an audiocassette was introduced with instructions on how to use the distance learning package. The complete package — seven box containers in all, was distributed to all tissue banks in the Asia Pacific member states. In April 1998, a “Train the Trainers” workshop was held in Singapore to instruct the national trainers on the use of multimedia curriculum. Since then, this multimedia curriculum has replaced the draft curriculum as the first component of the syllabus for the Diploma Course.

The University Diploma Course is conducted over a period of one-year. First, the trainees attend a face-to-face two-week intensive training course in Singapore. Over the subsequent year, they are given progressive study of the curriculum, guided by National Coordinators. Over this period, they pursue a number of practical and written assignments which are then remitted to the University

for assessment. Finally, at the end of the year, they return to Singapore for the final examination. The overall diploma is awarded by continuous assessment over the entire one-year course.

Development has continued regularly. The seven videotapes have now been converted into two compact discs contained in a jewel case. The curriculum has been in great demand. The initial 100 sets produced were quickly exhausted. Therefore, another 250 sets were produced in April 2000. The multimedia curriculum package has been further redesigned to have all the seven module booklets conveniently housed in one specially printed box container, which contains the seven modules, two compact discs, an audiocassette and a new updated textbook as a companion volume to the multimedia curriculum. This new compact design makes the distribution of the curriculum more convenient. The updated volume *Radiation and Tissue Banking* (2000) was written by experts contracted by IAEA and printed with funds from the Singapore Government. It is an appropriate companion volume to the IAEA multimedia curriculum. It was released in July 2000 and provided free of charge to tissue banks in the member states throughout the world.

2. The Present Development

The basic sciences component of the syllabus for the Diploma Course, which is presented in the training course, includes subjects such as Anatomy, Matrix Biology and Physiology of Tissues, Microbiology, Sterile Techniques, Radiation Sciences, Biology of Healing of Allografts, Biomechanics of Allografts and Immunology. It was quickly realised that students found difficulty in obtaining basic text for this part of the Diploma Course curriculum. Available specialist textbooks on the diverse subjects addressed, such as Anatomy, Microbiology, Immunology etc., were too detailed to meet the needs of the Diploma students. It was therefore decided to produce a specifically-designed specialist textbook incorporating the various topics and to be directed at the appropriate level so as to address the specific needs of the Diploma Course students and generally that of the tissue banker, tissue procurer, tissue processor