STATEMENT OF THE AUSTRALIAN AND NEW ZEALAND

SOCIETY OF RESPIRATORY SCIENCE

GUIDELINES FOR QUALIFICATIONS OF CLINICAL RESPIRATORY LABORATORY SCIENTISTS

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Introduction

Existing recommendations regarding the qualifications and training of the scientific and technical staff working in a respiratory function laboratory were published over ten years ago [1]. In the intervening years the role of scientific staff working in the clinical respiratory laboratory has changed significantly. The introduction of new technologies has increased the scope and complexity of respiratory function testing. The need for stringent quality control of all test processes has been realised. In many laboratories scientists now provide much of the training in respiratory physiology to medical staff and are responsible for reporting test results. Additionally, the imminent introduction of compulsory registration of respiratory scientists in New Zealand and the desirable and likely introduction of registration in Australia has necessitated the revision of the earlier recommendations.

These guidelines have been developed by the Australian & New Zealand Society of Respiratory Science (ANZSRS) to assist scientists employed in clinical respiratory laboratories, and those looking to enter the Respiratory Science profession, develop a career path in respiratory science. These guidelines are consistent with guidelines for other healthcare professions where registration is required. This document will be revised periodically and constructive suggestions for improvement are invited.

There is no data that establishes the depth or duration of training required to become competent to perform respiratory function tests unsupervised, successfully trouble-shoot equipment, or become a competent Head Scientist. Thus the guidelines presented here represent a consensus view of scientists who supervise or direct the operation of clinical respiratory function laboratories and have significant experience training Respiratory Scientists.

Staff definitions

This paper groups respiratory scientists into four arbitrary classifications based on education, training and experience.

Trainee Scientist **-** performs a limited range of respiratory function tests and associated duties under the supervision of a senior scientist.

Respiratory Scientist – is involved in all aspects of respiratory function assessment including patient testing, interpretation of test results, maintenance of equipment, development / evaluation of new methods and quality assurance. May work unsupervised in core areas and provide training to trainee scientists in these areas under the direction of senior Respiratory Scientists.

Senior Respiratory Scientist **–** is involved in all aspects of respiratory function assessment (as above), the supervision of trainee staff and may assist the Head Scientist / Scientific Director in aspects of laboratory operations. May work as a sole scientist or assist, where delegated, in the management of a laboratory.

Head Scientist/ Scientific Director **-** Additional to the role of a Senior Respiratory Scientist, the Head Scientist has overall responsibility for staff supervision and training and for the operation of the laboratory. The Head Scientist must have experience and demonstrate competence in solving equipment problems, analysing test protocols and the implementation of a rigorous quality assurance program. The Head Scientist may have significant involvement in research and teaching outside the routine operation of the respiratory function laboratory.

Guidelines for minimum education, training and experience for respiratory scientists within clinical diagnostic respiratory laboratory.

	Minimum Entry Qualifications	Training in Resp Sci	CRFS Credential	Minimum Lab experience
Trainee Scientist	BSc in Physiology or Equivalent	N/A	N/A	N/A
Respiratory Scientist	BSc in Physiology or Equivalent + tertiary qualification in Resp Sci	Essential, competency based	Yes	2 Year FTE
Senior Scientist	BSc in Physiology or Equivalent + MSc in Resp Sci or Physiology	Essential, competency based	Yes	5 Year FTE
Head Scientist/ Scientific Director	BSc in Physiology or Equivalent + MSc or PhD in Resp Sci or Physiology	Essential, competency based	Yes	10 Year FTE

Table legend: BSc: Bachelor of Science; MSc: Masters of Science; PhD: Doctorate; CRFS: Certified respiratory function scientist; FTE: full time equivalent; N/A: Not applicable. For full details see text.

GUIDELINES

The suggested tertiary and professional qualifications, training and experience for scientists employed in Australian and New Zealand clinical respiratory laboratories are shown in the table.

Minimum entry qualifications

It is recognised that the present diversity of educational backgrounds contributes to the broader profession of respiratory science and therefore basic entry tertiary qualifications may be from a variety of areas. However it is expected that these will be a three year degree course and include a major in the sciences (health sciences, clinical sciences, physiology or biomedical sciences), allied health or engineering. It is recommended that scientists without substantial practical and theoretical experience in respiratory science, and in particular young scientists commencing their career, obtain a formal tertiary qualification in respiratory science. This may take the form of a postgraduate certificate or diploma, a Masters degree by coursework or research or a doctoral qualification (PhD). It is the consensus that Senior Respiratory Scientists and Scientific Directors will require at least a Masters level qualification in the field of respiratory science in keeping with the broader supervision, training, teaching and research components these jobs may entail.

Formal Training in Respiratory Science

The level of on-the-job training required at each career level will vary greatly depending on the educational background of the individuals and the range of respiratory function investigations offered by the laboratories in which they are employed. As such, each individual has the responsibility to obtain the required skill base to be able to perform their tasks in an appropriate manner. This may involve additional training at another laboratory or undertaking formal courses in areas of need. Individuals are encouraged to maintain a log book of competencies achieved to assist in the identification of individual strengths and weaknesses and to facilitate registration as a respiratory scientist.

Certified Respiratory Function Scientist (CRFS) credential

Traditionally, clinical respiratory scientists have come from a range of backgrounds such as nursing, biomedical engineering, applied or pure science. This diversity resulted in the development of the Certified Respiratory Function Scientist (CRFS) credential by the ANZSRS. The CRFS credential, awarded following a written examination, sets a minimum standard of knowledge appropriate to the competent performance of standard respiratory function assessment in Australia and New Zealand. Detailed information on the CRFS credential can be found at www.anzsrs.org.au/certification.html. The CRFS credential is considered by the ANZSRS as the basic minimum evidence of competence to be acquired by the Respiratory Scientist.

Laboratory Experience

The duration of experience in respiratory physiology investigation that is required will vary depending on an individual's background and on specific laboratory requirements. In addition to acquiring experience directly relating to the investigation of respiratory function, all respiratory scientists should obtain experience in research and teaching relating to respiratory science. The Head Scientist is also responsible for generating an ethos of continuing professional development within their laboratory.

References:

1. Qualifications of Respiratory Function Laboratory Scientific and Technical Staff. http://www.thoracic.org.au/labstaff.pdf (Accessed 15 February 2007).

Review Summary:

These guidelines have been reviewed by members of ANZSRS Registration committee. Consultation was sought from the Professional Standards committee of the Thoracic Society of Australia and New Zealand. The final document has been approved by the ANZSRS Board for adoption by the Society.