



ANZSRS

Australian and New Zealand Society of Respiratory Science Ltd
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POSITION STATEMENT

GUIDELINES FOR QUALIFICATIONS OF CLINICAL RESPIRATORY SCIENTISTS

Version and Date	Professional Standards Sub-Committee Members
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Introduction

In 2016, the Australian and New Zealand Society of Respiratory Science (ANZSRS) released a position statement on Qualification Guidelines for Respiratory Scientists. This comprised scientists from across Australia and New Zealand with significant clinical experience, who direct the operation of clinical respiratory function laboratories and have trained Clinical Respiratory Scientists. In July 2020, a subcommittee of similar expertise was formed to review the 2016 guidelines. This position statement is based on the consensus opinion of the subcommittee after reviewing the 2016 ANZSRS Qualification Guidelines for Respiratory Scientists¹, 2016 Thoracic Society of Australia and New Zealand (TSANZ) Laboratory Accreditation standards², 2016 ANZSRS Respiratory Function Testing competency guidelines³, the role of the Scientific Director/Senior Scientist as referenced in the 2019 TSANZ Medical Director position statement⁴ and with consideration of guidance provided by the Australian Council for

Clinical Physiologists (ACCP)⁵ and Clinical Physiologist Registration Board (CPRB)⁶ in New Zealand.

Traditionally, Clinical Respiratory Scientists have come from a range of backgrounds. There was no single undergraduate qualification available for respiratory measurement and the profession commenced as a technical role. This diversity has resulted in experienced and knowledgeable Clinical Respiratory Scientists with a wide variety of formal qualifications. The title “Clinical Respiratory Scientist” has been used to date, however health services across Australia and New Zealand have adopted their own naming convention to describe the role. The ACCP and CPRB have adopted the title Clinical Physiologist (Respiratory).

These guidelines are not intended to be applied retrospectively to existing appointments; it is envisaged that they will be used prospectively:

- a) to provide a framework for career path development for junior scientists employed in clinical respiratory laboratories, and those looking to enter the Respiratory Science profession
- b) in tandem with the 2016 TSANZ laboratory accreditation standards², and
- c) where scientist registration is required.

Formal Training in Respiratory Science

All Clinical Respiratory Scientists must either hold or be enrolled in a Bachelor of Science or equivalent. It is expected that at a minimum, this will be a three year degree, recognised in Australia and/or New Zealand (Level 7 of the Australian Qualifications Framework⁷ or the New Zealand Qualifications Framework⁸, and should include a major in the sciences including, but not limited to: health sciences, clinical sciences, physiology or biomedical sciences. International qualifications may require assessment for equivalence from appropriate government bodies.

ANZSRS Competency Training and Assessment Package

The ANZSRS Framework for Attaining Competence in Respiratory Function Testing³ has been developed

to provide new Clinical Respiratory Scientists with the specific information and practical skills required to safely and competently perform spirometry, gas transfer and lung volumes in a clinical respiratory function laboratory. It is essential that new staff complete these ANZSRS training and assessment requirements prior to testing unsupervised within a laboratory. Details regarding this assessment tool can be found on the ANZSRS website under Member Content Education.

Certified Respiratory Function Scientist (CRFS) Credential

The Certified Respiratory Function Scientist (CRFS) credential was developed by the ANZSRS to standardise the knowledge of Clinical Respiratory Scientists. The CRFS credential, awarded following a written examination, sets a minimum standard of knowledge for Clinical Respiratory Scientists in Australia and New Zealand. The CRFS credential is obtained by passing an examination assessing knowledge in a wide range of areas including respiratory system anatomy, respiratory system physiology, respiratory terminology, gas laws and correction of gas volumes, instrumentation and equipment, pharmacology, diagnostic procedures and data management⁹. To be eligible to sit the CRFS examination candidates must be current financial member of the Australian and New Zealand Society of Respiratory Science, and either:

- a) hold an appropriate tertiary degree and complete a minimum of one year of clinical experience in the field of respiratory science, to be interpreted as a minimum of 35 hours per week employed in a respiratory function laboratory, or
- b) complete five years of clinical experience in the field of respiratory science, interpreted as a minimum of 20 hours per week employed in a respiratory function laboratory.

Detailed information on the CRFS credential can be found on the ANZSRS website⁹.

Continuing Professional Development

Individuals should maintain a record of their continuing professional development to assist in the

identification of opportunities for further development and to facilitate registration, where required. as

Examples of professional development include, but are not limited to:

- Attainment of new competencies
- Training at another laboratory in measurement techniques
- Formal higher qualifications related to employment or opportunities for future employment.
- Short courses related to employment/field of work
- Attendance at professional body conferences/congresses
- Membership to national accreditation bodies* ^{5,6}

In addition to acquiring experience directly relating to the investigation of respiratory function, Clinical Respiratory Scientists are encouraged to obtain experience in other areas that may assist in their role such as communication, critical evaluation, analytical and decision-making skills, finance/accountancy and human resource management.

** Membership to accreditation and registration bodies in Australia⁵ and New Zealand⁶ are currently voluntary and under self-regulation.*

Clinical Respiratory Scientist Definitions

A Clinical Respiratory Scientist is a specialist allied health professional who works primarily in a Respiratory Function Laboratory. This guideline classifies Clinical Respiratory Scientists into levels based on education, training and experience. Local awards, enterprise bargaining agreements and role descriptions must also be considered for each jurisdiction. To account for differing local awards and job titles a simple numbering convention (Level 1 – Level 6 Clinical Respiratory Scientist) will be used to indicate entry to director level positions. Table 1 below provides a role description for each of the Clinical Respiratory Scientist classification levels.

Table 1: Guidelines for qualifications (mandatory and desirable) and corresponding role description for Clinical Respiratory Scientists from entry level (Level 1) to scientific director level (Level 6).

<p>Level 1 (L1) <u>Qualifications:</u> Mandatory: Enrolled in a recognised BSc, or equivalent Desirable: N/A</p>	<p>Definition: An undergraduate student currently undertaking a Bachelor of Science or an equivalent science degree. L1 Clinical Physiologists (Respiratory) perform a limited range of respiratory function tests under the constant direct supervision of a qualified and experienced Clinical Respiratory Scientist.</p>
<p>Level 2 (L2) <u>Qualifications:</u> Mandatory: BSc or equivalent Desirable: N/A</p>	<p>Definition: A L2 Clinical Respiratory Scientist has a Bachelor of Science or an equivalent science degree. They may be a new entrant to the respiratory field and/or a recent graduate working towards further specialised respiratory qualifications (i.e., CRFS) or registration, where such registration is compulsory (NZ at time of agreement). L2 Clinical Physiologists (Respiratory) perform a limited range of respiratory function tests under close supervision.</p>
<p>Level 3 (L3) <u>Qualifications:</u> Mandatory: BSc or equivalent Successful completion of ANZSRS competency assessments ≥1-year FTE Desirable: N/A</p>	<p>Definition: A L3 Clinical Respiratory Scientist holds a Bachelor of Science or an equivalent science degree and has successfully completed the ANZSRS competency assessments. They work independently, however recognise the limits of their experience, and seek help and guidance when appropriate. They are involved in all aspects of respiratory function assessment including, but not limited to:</p> <ul style="list-style-type: none"> • routine patient testing - applying international standards of practice • assessment and reporting of test quality • preparation of results for reporting • maintenance of equipment • participation in quality management system • maintaining an awareness of new and updated practice guidelines and recommendations
<p>Level 4 (L4) <u>Qualifications:</u> Mandatory: Bachelor of Science or equivalent Successful completion of ANZSRS competency assessments ≥2 years FTE Desirable: CRFS</p>	<p>Definition: A L4 Clinical Respiratory Scientist holds a Bachelor of Science or an equivalent science degree and has successfully completed the ANZSRS competency assessments. They have worked in in a clinical respiratory function laboratory for a minimum of 2 years and may be performing specialist tests under supervision. In addition to the duties of a L3 Clinical Physiologists (Respiratory), those at Level 4 can work unsupervised and may act as trainers and competency assessors for junior staff.</p>
<p>Level 5 (L5) <u>Qualifications:</u> Mandatory: BSc or equivalent Successful completion of ANZSRS competency assessments ≥5 years FTE</p>	<p>Definition: A L5 Clinical Respiratory Scientist holds a Bachelor of Science or an equivalent science degree and has worked in a clinical respiratory function laboratory for at least 5 years. L5 Clinical Physiologists (Respiratory) work unsupervised, are involved in all aspects of respiratory function assessment and may perform complex tests requiring specialised knowledge and/or assist in the management of the respiratory function laboratory.</p>

<p>CRFS</p> <p>Desirable: Recognised post graduate qualifications (L7 or higher AQF or NZQF) relevant to medical sciences from a recognised tertiary institution including, but not limited to:</p> <ul style="list-style-type: none"> • Master of Science (MSc), Master of Applied Science (MAppSc) • Graduate Diploma in Health Administration • Graduate Diploma Biostatistics • Graduate Diploma Epidemiology • Master of Applied Epidemiology • Master of Epidemiology 	<p>Their skills include but are not limited to:</p> <ul style="list-style-type: none"> • supervision and training of junior staff • providing educational sessions to interns, residents and basic and advanced physician trainees as appropriate. • assistance with laboratory management as delegated by, or in the absence of, the L6 Clinical Respiratory Scientist/Scientific Director • active participation in laboratory quality assurance activities and the development and review of laboratory manuals • commitment to further professional development through either enrolment/completion of post graduate studies or regular attendance/contribution at national and international meetings/courses
<p>Level 6 (L6)</p> <p><u>Qualifications:</u></p> <p>Mandatory: BSc or equivalent Successful completion of ANZSRS competency assessments ≥10 years FTE CRFS</p> <p>Desirable: recognised post graduate qualifications (L7 or higher AQF or NZQF) relevant to medical sciences from a recognised tertiary institution including but not limited to those listed under Senior Clinical Respiratory Scientist and/or:</p> <ul style="list-style-type: none"> • Doctor of Science (DSc) • Doctor of Philosophy (PhD) • Management courses (e.g. MBA) 	<p>Definition: A L6 Clinical Respiratory Scientist / Scientific Director holds a Bachelor of Science or an equivalent science degree and has worked in a clinical respiratory function laboratory for at least 10 years. The Head Clinical Respiratory Scientist can perform all the duties of a L5 Clinical Respiratory Scientist and has overall responsibility for the running of the respiratory function laboratory.</p> <p>Their duties include but are not limited to⁴:</p> <ul style="list-style-type: none"> • recruitment, supervision, training and evaluation of scientific staff working in the respiratory function laboratory • management of overall laboratory performance including; maintaining laboratory statistics, implementation of a rigorous quality assurance program and managing the budget for their laboratory • maintaining the laboratory to professional and hospital standards required for accreditation by TSANZ and any other local authorities. • initiating, leading or overseeing research and introducing new equipment and devices in the respiratory function laboratory • a commitment to further both their own and their staff members professional development

† Mandatory requirements are not intended to be applied retrospectively to existing appointments but used prospectively.

BSc: Bachelor of Science; MSc: Master of Science; PhD: Doctorate; CRFS: Certified Respiratory Function Scientist; FTE: full time equivalent; N/A:

Not applicable. For full details see text.

References

1. 2016 ANZSRS Qualification Guidelines for Respiratory Scientists
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8. New Zealand Qualifications Authority. The New Zealand Qualifications Framework.
<https://www.nzqa.govt.nz/assets/Studying-in-NZ/New-Zealand-Qualification-Framework/requirements-nzqf.pdf> Last accessed September 2020.
9. ANZSRS Certified Respiratory Function Scientist (CRFS) examination information 2020.
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