

Importance of uniformity in education, continuing education and preparing tomorrow's leaders

Ramkumar Venkateswaran*

Email: rvenkateswaran@gmail.com

Introduction

Respiratory disorders are fast becoming a major cause of health concern, lagging behind only cardiovascular diseases and infectious diseases in terms of magnitude. With smoking being a major predisposing factor along with environmental pollution, it is not surprising that respiratory disorders have received increasing attention in the recent past.

The growth of the speciality of Respiratory Therapy has run parallel with the increasing incidence of respiratory diseases. Unlike the rest of the world, the speciality is still very young in India, having made its beginning just about 2 decades ago. The Respiratory Therapist is a specialist who not only has the theoretical background and clinical skills to identify disorders of the respiratory system but in addition has the ability to understand the management strategies used in their treatment. Any curriculum designed to teach the speciality should therefore keep in mind the above goals to be achieved at the end of the course.

What are our responsibilities as a health educator?

The role of any health educator is to provide the student with the necessary background medical knowledge that will help the student understand how the disease process has affected the normal

functioning of the human body. The student should be capable of independently conducting a clinical examination and arriving at the diagnosis of the medical condition. They should also be able to understand the tests that are performed to diagnose the presence of disease conditions and quantify the severity of the disease as indicated by the results of these tests. Last but by no means the least, they should be able to understand the pharmacological and physiological basis of treatment modalities that are initiated to deal with such medical disorders.

Planning the course content

Keeping the above educational goals in mind, the student of respiratory therapy should possess sound knowledge of human anatomy and physiology, with special reference to the respiratory and cardiovascular systems. It is therefore appropriate that the curriculum for respiratory therapy addresses the teaching of basic anatomy and physiology in reasonable detail during the first year of the course before going on to a more detailed learning of the relevant cardiorespiratory anatomy and physiology in the later years. The latter will facilitate in-depth understanding of cardiorespiratory disorders. As the respiratory therapist would be caring for critically ill patients in the intensive care unit, it is mandatory that the student be taught the pathophysiology of disease processes that commonly necessitate admission into an intensive care unit. This would be mandatory not only for understanding the pathophysiology of the disease but also for evaluating the impact that therapeutic modalities have on the course of the disease.

Ramkumar Venkateswaran, MD

Professor and Head of Anaesthesiology, Kasturba Medical College, Manipal

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To this end, the student of respiratory therapy should be familiar with diagnostic tests (haematology, biochemistry, pathology, microbiology and radiology) used to diagnose the exact nature of disease conditions. It is important that the course covers various diagnostic tests as this forms an important facet of arriving at the correct diagnosis. Ability to define the significance of the results of laboratory test strengthens the role of the respiratory therapist in the treating team.

Intensive care essentially involves monitoring of physiological functions of a critically ill patient and initiating therapeutic modalities that would optimise altered physiology. To be a useful member of the team, the respiratory therapist should not only understand the theoretical basis of monitoring used in the intensive care unit but should also be capable of interpreting data obtained from patient monitoring systems, especially with respect to noninvasive and invasive monitors of the cardiovascular and respiratory systems.

The basic function of breathing is to bring about gas exchange. Respiration facilitates the important functions of taking up oxygen into and removing carbon dioxide from the blood that flows through the lungs. Respiratory therapists should have the expertise to identify whether these two important functions of respiration are being carried out effectively. They should possess the ability to identify the biochemical end points of gas exchange through expertise in the interpretation of arterial blood gas reports. They should also be capable of performing basic and advanced pulmonary function tests and interpret the results of such tests.

Having mastered the skill needed to detect and quantify the presence of respiratory disease, the next step in education would be to understand the rationale of performing respiratory care procedures. As a professional group, respiratory therapists should be capable of rationally administering medical gases such as oxygen, helium and nitric oxide. Practical training in methods of humidification, postural drainage, chest physiotherapy and tracheal suctioning constitute important core skills that need

to be acquired during clinical rotations. They should know the rationale behind the use of noninvasive or conventional ventilatory support and special techniques such as extracorporeal membrane oxygenation.

Respiratory therapists need to be well versed with airway management techniques including bag-mask ventilation and endotracheal intubation. This is particularly true in centres where they are expected not only to initiate ventilatory support and but also to supervise the clinical management of a patient on ventilatory support (including escalating support or weaning off ventilatory support as dictated by the clinical condition of the patient). At such centres, the respiratory therapist actually takes on the role of an intensivist or a respiratory physician. Respiratory therapy courses should teach in detail the working principles of ventilators, as also the relative merits and demerits of various modes of ventilation, so that the respiratory therapist could rationally choose a mode that is appropriate for the clinical condition. A respiratory therapist who is capable of troubleshooting minor ventilator malfunction will surely be a respected team member in an intensive care unit.

Respiratory therapists have a responsibility towards rehabilitation of patients with chronic respiratory disorders with the aim of improving their quality of life. The course should address issues such as smoking cessation and life-style alteration to limit the impact of any functional disability.

The role of a respiratory therapist in cardiopulmonary resuscitation cannot be adequately emphasised. Respiratory therapists are well placed both in terms of knowledge and skills to be a legitimate and useful member of the *resuscitation team*. They should therefore be trained in the performance of cardiopulmonary resuscitation.

Respiratory therapists often constitute the core team of professionals caring for critically ill patients. They need to understand the psychological impact of critical illness not only on the patient but also on the caregiver. They, along with the nurses, are often

ideally placed to communicate with the relatives of the patient. Armed with compassion and complete knowledge of the prognosis of the clinical condition, they can make a huge difference to the mental comfort of the caregivers. The course should address these issues through sessions on clinical psychology.

Respiratory therapists also have responsibilities beyond clinical care of patients. These include teaching, clinical research, and research and development in industry. Courses on *teaching-learning methodology* as well as *statistics in research* need to be included for preparing a respiratory therapist for the future.

Ensuring uniformity of education and acquisition of skills

Having outlined the components of what needs to be taught, how does one ensure that the course content remains reasonably similar irrespective of where the course is taught?

That brings us to the daunting task of maintaining uniformity in education. This can be achieved by liaison between faculty teaching the course in different institutions. We are very fortunate that the senior faculty from several institutions where respiratory therapy is being taught have come together to bring about uniformity not only in the education pattern and course content but also in the examination pattern at the end of the stipulated period of learning. We need to freeze the duration of the course as it now varies from 2 to 4 years (inclusive of internship). Structured evaluation of knowledge achieved at the end of every year of training should be ensured by annual examinations at the end of each year. Adequate acquisition of clinical competence should be specifically addressed during the clinical examination and viva-voce at least at the end of the 3rd year of training.

Once the basic knowledge and skills have been certified, the course should include a year of compulsory Clinical Internship. In my opinion, this year should be partly spent in the institution where the student has studied with roughly half the time

being spent in other institutions where similar courses are being taught. Major institutions should encourage mutual exchange of their students for completing their Internship as this will expose the student to different work environments. Weaning oneself away from one's *alma mater* removes the student from their "comfort zone" and prepares them for the challenges of the real world.

During Clinical Internship, students should demonstrate ability to carry on protocolised respiratory care (including ability to diagnose respiratory failure, initiate ventilatory support and perform protocolised weaning off ventilatory support).

Role of continuing education in updating knowledge and skills

Knowledge is like a flowing river. The water remains fresh only if it is in constant motion. The moment a tendency to stagnation sets in, knowledge also becomes "static". As teachers, we should encourage our students to register for Intensive Care conferences, Pulmonary conferences, Pulmonary function test workshops and similar educational activities. They should present their clinical work at such conferences as these provide the ideal platform for making an impact on professional colleagues. These occasions also provide the opportunity to meet world-renowned teachers in the field of respiratory care. Interaction with such individuals widens one's knowledge and professional skills.

Preparing tomorrow's leaders

I still remember addressing my first batch of respiratory therapy students on the first day of their course way back in September 1995. Very frankly, at that point of time, both the student as well as the teacher shared the same fear about the future of the speciality. I clearly remember encouraging my students along saying "*Build yourselves into the system in such a way that you become an indispensable member of the team*". More than 16 years down the line, we have more than realised that goal. Respiratory therapists have undoubtedly become an important cog in the wheel that powers intensive care units.

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Despite this realisation, there are a number of critical care physicians who fail to recognise the potential improvement in quality of care that the respiratory therapist can bring about by their involvement in the intensive care setting. Can we do anything more to cement our place in intensive care units and work hand-in-hand with the intensivists?

The answer lies in the way respiratory therapists project themselves. We must first of all have faith and belief in our own capabilities. We must feel proud of being a respiratory therapist and let our deeds do the talking. We must work towards making ourselves a strong link in the chain of clinical care offered to a critically ill patient.

India is a vast country with a growing need for respiratory therapists. To meet this ever-increasing demand of professionals, it is possible that Respiratory Therapy programmes will be started in many institutions in India in the years to come. In order to maintain credibility not only in the

national scene but also in the international arena, it is mandatory that all such new training institutions adhere to national and perhaps, international standards. Who is better placed to understand the need for such uniformity in education than the respiratory therapists themselves. The onus of providing high standards of patient care as well as creating strict educational norms lies squarely on the shoulders of the young generation of well-trained respiratory therapists.

A true leader leads by example. Remember that until the speciality is strong enough to stand on its own legs, you are the ambassadors of the speciality. The future beckons you. Are you ready to take those giant strides that will cement the role of respiratory therapists in the intensive care units of the future? Are you ready to take up the challenge?

Inspire to live!
Live to inspire!!