

# Pulmonary Function Laboratory

*A Study in Specialised Care*

Miss JANE DRIVER

IN the Nursing profession specialities and super specialities are gaining more and more importance. Specialist operation theatre nurses, I.C.C.U. nurses and psychiatric nurses play a great role in efficient management of patients. Likewise, specialized nurses in Pulmonary Function Laboratory are essential, where harried patients need special care and attention.

Respiratory diseases like Asthma, Bronchitis, Emphysema, T.B. and Cancer are increasing at a horrifying pace in metropolitan cities like Bombay, Calcutta and Madras. This fast deterioration is due to overflowing population, localized heavy industrialization and the subsequent unbalanced ecology.

## Containing the Menace

Medical authorities have realized this growing menace, and as a result Pulmonary Function Laboratory at St. George's Hospital affiliated to Grant Medical College was started in September 1978. The Laboratory is manned by Pulmonary physicians Dr. A. R. Ghamande and Dr. P. V. Niphadkar.

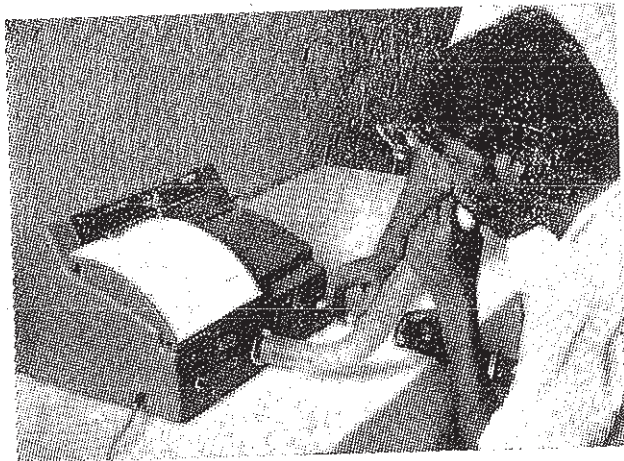


Fig. 1: Vitalograph.

The laboratory is well equipped with machines like Vitalograph, also known as Dry Spirometer (Fig. 1). It has a balloon attached to a level system and the patient blows in air via a large breathing tube into the machine. Simple but correct explanation to the patient is the key to better results. This pulmonary function test helps the

The author is Staff Nurse at Pulmonary Function Laboratory, St. George's Hospital, Bombay.

doctor and the nurse to diagnose obstructive and restrictive diseases of the lungs.

## Functions of the Lab

1. Gauges the lung capacities. 2. Helps in early diagnosis of the Pulmonary diseases. 3. Assesses the effectiveness of the treatment. 4. Gives a prognosis. 5. Evaluates physical fitness for surgery.

The nurse checks the rate of airflow on a Wrights Peak Flow Meter (Fig. 2) which gives



Fig. 2: Peak Flow Meter (Wright's Mini-Model).

spot measurement of obstruction. Here, the nurse instructs the patient to blow inside the breathing tube and the marker records his speed of blowing.

## Normal Indian Values

|          |     |     |             |
|----------|-----|-----|-------------|
| Females: | 350 | 400 | 450 lit/min |
|          |     | 500 |             |
| Males :  | 450 | 500 | 550 lit/min |

A special form of therapy called as Intermittent Positive Pressure Breathing Therapy (I.P.P.B.) is given to patients with severe Asthma and Bronchitis. Alupent is delivered by a nebulizer under pressure by Bird's Respirator (Fig. 3). This therapy has been found to be very effective and useful.

The laboratory is also equipped with a Corning Blood Gas Analyser which is easily operated by the nurse. This machine instantly records O<sub>2</sub> and CO<sub>2</sub> levels in the blood, and decides whether the

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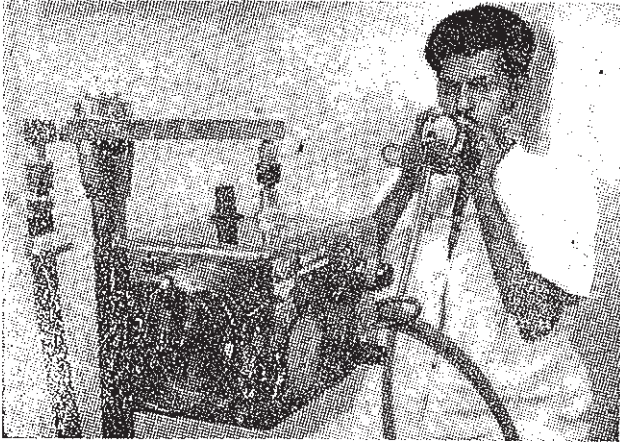


Fig. 3: Bird's Ventilator—mark 10.

patient's blood is alkaline or acidic. One has to just push 2 cc of heparinized blood through a tubing and get the results.

Similarly, patients coming with histories of asthma, allergy or allergic rhinitis undergo an allergy test to identify the various allergens respon-

sible for the disorder. The nurse plays a vital role in helping the doctor in performing the test. These tests are similar to mantoux test, but unlike the latter, the results are read, immediately within minutes.

No matter how efficiently a nurse carries out the practical side of her duties, she must not forget to appreciate and rise to the emotional and psychological needs of her patients. Patients are always anxious and in their anxiety will ask questions they want to know and indeed are entitled to know as to what is wrong with them and what purpose the above given techniques used in the investigation and treatment of their illness serve. To explain and to reassure is most important and it is the duty of the nurse to do her utmost in every way she can.

In our opinion, the time has come for nurses to become aware to the felt need and acquire specialized training in this new upcoming and vital super-speciality. Many such centres should be established for multi-functional purposes. We strongly feel and urge the Governments, Directorates of Health Services and Research Centres to start a new faculty of Pulmonary Function Laboratories.

### BREAST FEEDING

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introduction of pre-lactal feeds, delay in the initiation of first breast feed, rigid schedules of infant feeding, etc. all tend to promote bottle feeding rather than breast feeding. These practices make a mockery of any attempt to promote breast feeding. Unless these policies and practices are changed the nurses are handicapped to promote the concept and practice of breast feeding.

Considering that only a small proportion of women come to the hospital for delivery, it is important that A.N.M.s, midwives, dais, village level workers and community health workers should be educated and trained for the promotion of breast feeding in the far reached urban and rural areas. The training of these workers should be entrusted to the nurse who is herself prepared for this specialised task.

In conclusion, I may reiterate that the nurse is best placed to play an important role in fostering the conditions in which breast feeding can flourish. A nurse has a unique responsibility, unmatched opportunity and ability to promote breast feeding and thus fertility control. But this can be only achieved by a cooperative and collaborative effort of all the members of the health team or so-called care team. A health team is like a chain which is load bearing and has several links. Each one of these links must stand up to the pressure of this task. Should there be a weak link, it snaps the chain and ceases to function. A professional nurse, like an obstetrician, paediatrician and neonatologist, is an important link in this chain. Hence her role needs to be strengthened to achieve the task in front of us.

### THE EDITOR

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