

THE NURSE AND TUBERCULOSIS

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There are three aspects which are to be considered today:—

1. Tuberculosis among student and graduate nurses, and how to protect our girls from infection.
2. Tuberculosis patients in our hospitals; their treatment and prophylaxis for others.
3. The TB Clinic and Home Nursing.

Each of these subjects is big enough for a whole day's conference, and I am audacious to attempt all three in one short paper. But all three are very necessary at this time, and I am glad for an opportunity to present them to the Punjab Branch of the Indian Nurse's Association.

TUBERCULOSIS is a very real danger for our student nurses, both at home and here in India. The death rate for young women has shared but little in the decline of the total death Rate in recent years. T.B. is still the first cause of death in the age group of 15 to 45 yrs. The peak in Ludhiana coincides with the ages of our student nurses, 17 to 21 years. Tuberculosis is more frequent among medical students and nurses in training in general hospitals at home than among the non-medical group of the same age. And this must be true, even more so, in India, for we all know there is much unrecognized active tuberculosis in hospital wards. Not until we can tuberculin test all our patients on admission and take X-rays of the positives can we be sure to keep our wards free from infection. In Ludhiana we find that 85 to 90% of our urban and 80 to 85% of our village patients are tuberculin positive. This test proves infection if positive, though not active disease. We try to fluoroscope—"screen"—each positive patient who is coughing, and examine numerous sputum specimens. Still too often we have found tubercle bacilli several weeks after the patient had been admitted. In the meantime, our nurses have been giving the patient intimate care, without any protection.

We know that it is the *massive daily* dose of bacilli which is the cause of most T.B. disease; just such a dose as a nurse would get while caring for a careless patient.

As our Indian girls say; "Kya karun?" What, indeed, can we do? There are several things we can do:—

1. Make sure they have no active tuberculosis on admission, by examining, tuberculin testing, and X-raying all positives. If X-ray examinations are not possible, an unusually careful physical examination of the chest should be made. As the physical examination is negative in most early tuberculosis cases, the X-ray is of much more value in finding these earliest cases. Tuberculin tests should be repeated each year.

It should be clearly understood that a positive reaction gives only these two facts:—1st, that the person has at some time been in contact with persons or animals suffering from tuberculosis or eliminating tubercle bacilli. This may have been a hidden case, or a casual contact, but a person cannot get tuberculosis without contact with the bacillus. 2nd, the positive reaction proves that somewhere in the body there is at least one focus of tubercle bacilli. The test does not inform us as to where the lesion is, it may be in the brain, the spleen, or any other part of the body, but it is most frequently in the chest. It does not indicate the extent of tuberculosis: a very small lesion that we cannot find may give as large a reaction as an advanced lesion; nor does it show if the lesion is under control or not. In rare cases we might get a negative reaction with a demonstrable X-ray lesion. Explanation of this is probably that the focus is so well walled off that there is no interchange of tuberculo-protein between the focus and the blood,—for it is this presence of the tuberculo-protein which causes the body to keep up its sensitiveness to the bacillus—giving the positive reaction. When we first began tuberculin testing our students and nurses at Ludhiana, we had the positive reactions weeping on our shoulders because they thought they had tuberculosis! Not until activity is proved is there any need for treatment, though we should know who has a positive,—and who has a negative, reaction. The negative reaction especially should be protected against massive infection.

2. Check up on their physical health by semi-yearly physical examinations, and by monthly weighing. In Ludhiana we have observed patients develop far advanced tuberculosis within six months of a negative physical and fluoroscopy examination, proving yearly examinations are not enough.

3. Keep up their resistance,—which largely determines whether disease will develop,—by proper general hygienic and dietetic measures: regular exercise and recreation, careful diet, proper ventilation of their rooms—especially see that they do not cover their heads at night: an 8 hour or a reasonable working day.

It is a well established fact that there is more tuberculosis among medical students and nurses in general hospitals than among the general public of the same age. It is also known that tuberculosis is much worse among young women than among young men, after the age of 17 years. In a recent extensive study carried out in Detroit, U.S.A. of the etiological factors causing more tuberculosis among young women, their conclusions were that "On the whole, it is the opinion that the problem of tuberculosis among the young women investigated was primarily a problem of the child-bearing period and of the period during which physical development constituted a more or less consistent strain upon the strength and general health of the young woman." This last was indicated by data concerning peculiarities of menstruation, especially irregularities in time or flow. It shows that

for 65% of the girls studied, indications are that menstruation is not a perfectly normal, harmless function,— it is a period of discomfort and probably of real physical weakening. The student nurse should be protected as much as possible during her periods. Remember that she develops tuberculosis more often than her non-medical sisters.

4. Prophylaxis in the wards, to protect them from infection will be taken up later in connection with the treatment of the tuberculosis patient.

THE TUBERCULOSIS PATIENTS' HOSPITALS; their treatment and prophylaxis for others.

The first thing that we want to say about the treatment of tuberculosis is a message of Good Cheer for the patient. We would like to have it sung throughout the land, especially at the beginning of our new and bigger anti-tuberculosis program: **TUBERCULOSIS FOR THE PATIENT TODAY IS NOT THE HOPELESS DISEASE THAT IT WAS EVEN FIVE YEARS AGO.** With the newer application and perfection of methods of collapse therapy, we have much to offer, even to many of the advanced cases. And for the early cases, we can assure them that their hope is great, even though they cannot stop work for more than a short time—if at all.

There are two groups of open tuberculosis patients in our wards: The recognized and the unrecognized. The following suggestions will lessen the danger from both the known and the unknown cases: I am giving these as from the nurses' point of view: for protection of our own girls. In fact, they are in graver danger than the patient's fellow sufferer, who stays in contact only a short time, for it is the *daily* dose, continued for weeks or months, that is responsible for most new cases. Surely these measures will much reduce the danger to all in the ward. Of course, it is understood that the recognised case will be segregated as adequately as possible during his stay in hospital.

1. In the wards: Teach the nurse to treat all coughers as though they were infectious, especially not to get closer than 3 ft from the patient's mouth. The droplets that are large enough for a bacillus to travel on are too heavy to float further than this. A 6 ft. distance between beds, therefore, is ample to protect the next patient from droplet infection.

2. Insist on all patients covering their mouths while coughing, and using a covered sputum cup with a little phenile lotion for all sputum produced.

3. Train nurses and attendants to wash their hands often, especially before their own meals and on leaving the wards. If there is a known open case, it should receive isolation technique: a special gown while bathing or giving the patient intimate care, lotion for the nurses' hands as she leaves the patient, etc.

4. To prevent contamination from flies, the proper care of all excreta is necessary. The Punjab nurse is too often negligent in her care of bedpans. She should understand that if a bed-

pan from a tuberculosis patient sits around uncovered, with its millions and millions of living bacilli, it becomes a grave menace to all the ward and its attendants. I was glad to learn this summer that in many of the Bengal and Assam hospitals, the nurse gives, takes, empties and cleans all bedpans, as they do at home.

Sputum should be collected in covered sputum cups, and thoroughly destroyed, either by burning or boiling. We use a simple sputum cup which can be made in any bazaar for a few pice. If we will all remember that one patient may produce enough bacilli per day to give one to each of the 7,000,000,000 inhabitants of this World of ours, it will make us more bacillus conscious when we hear a person cough.

5. Wards should not be swept with dry brooms. These bacillus laden droplets fall to the floor, and when mixed with the dust and stirred up by the sweeper's broom, they become the nurse's and other patient's "portion" or dose for that day.

6. Likewise dirty dishes and left-over food of the patients should be properly and promptly cared for.

7. The fly menace should be guarded against as much as possible. In fact, our hospitals should be models for the protection of our nurses and patients, that the patient can see and understand. In this way the hospital may become a very real public Health institution for the practical teaching of hygiene for the homes of all patients whom we have the privilege and honor of serving.

THE TUBERCULOSIS CLINIC

There is great opportunity before hospitals at this time, to lead out in the future of tuberculosis work in India. It is such a tremendous problem: 6 millions of pulmonary tuberculosis cases is not at all an unreasonable estimate; and to this must be added many hundreds of thousands more of surgical cases: intestinal, bone, gland, etc.

We are very grateful to Lady Linlithgow for her practical interest in this grave problem. She has ushered in the dawn of a better day for the tuberculosis. The question is before the hospitals as to what they—YOU will offer as your contribution. Some 15 years ago Dr. Frimodt-Moller advocated the opening up of TB clinics and wards in all Mission hospitals. While we tuberculosis workers will have to depend upon the out-patient clinic for the treatment of the vast majority of our patients, yet without hospital facilities the clinic is inadequate. We need beds for short hospitalization of patients for whom we wish to give collapse therapy: such as artificial pneumothorax, phrenic nerve exeresis, thoraeoplasty, etc. These patients should be in special wards for two reasons: to save the non-tuberculosis from contact with a positive case, and also as a training school for the patient and his relatives, as to how the patient should live when he returns home. So you see, the tuberculosis ward as we wish it to be will not be the hopeless place of the past. We do not ask you to take care of the dying patient. If they do die in their own homes, it means only a few more days of

contact for their families. Admittedly that is serious enough, and we do need isolation facilities for them. But we could spend all our funds in this way, and accomplish nothing—for the mother's hospital bed would soon be filled by the daughter. Our hope lies in finding these infected homes, gaining their confidence and cooperation by doing all we can for the patient and protecting the family as much as possible until his death and then watching over the family so that newly developing cases may be quickly found. For these we can almost promise permanent cure. Remember that, with our various methods of collapse therapy, we have much to offer the moderately advanced, and even certain of the far advanced cases.

HOME VISITING

As the Tuberculosis clinic is inadequate without hospital facilities, so also is it without a home visiting service. Tuberculosis work is like a three legged stool, it cannot stand with even one leg missing or badly crippled. The necessity for this service, is quickly proved: There are in India 6 Millions of pulmonary tuberculosis patients. There are less than 2,000 beds available for them, either in sanatoria or hospitals. There are, therefore, 5,998,000 patients in their own homes, and there is no place for them to go. Also, the lessons learned by the fortunate few during their limited stay in sanatorium or hospital ward must be adapted to home conditions and the HOME TREATMENT, in the last analysis, must carry the burden of the cure, whether supervised or not.

In America, dispensary instructions including printed leaflets have proved to be not sufficient for the home treatment of a case. It is the frequent call of the home visitor with her oft repeated directions and checking up on what they have learned and put into practice that brings about better home conditions.

One of the present difficulties in the anti-tuberculosis program is the training of these visitors. Ideally they should be trained nurses, with special training in tuberculosis work. But there are two difficulties: Not enough nurses are available, nor can we see how the present training schools could supply the future demands. The second obstacle is that the salary cost would be too great. One visitor can supervise 200 families; Ludhiana, for instance, has 2,000 cases; therefore we need ten visitors. Would it be well to have one tuberculosis-trained graduate nurse as supervisor and lower grade workers under her? If so what should be the qualifications for these?

The tuberculosis home visitor's training should include good courses in hygiene, home sanitation and economics, and nursing as well as on tuberculosis its prophylaxis, treatment, and nursing. A short hospital or sanatorium experience would be very necessary, and much field work under a competent supervisor. Even with all this training, unless a visitor has infinite patience and tact and good judgement, she will be of little value. Many homes deny or resent the diagnosis of tuberculosis, and it is only with

gentle persuasion that our Health Visitors can win their confidence,—occasionally we fail utterly for a time. This week I visited such a home,—who are now willing for our help,—following the death of the former patient and the breakdown of that patient's son. May we ask for any suggestions that you may have for the Home Visiting Service?

No Doctor or Nurse so long as she is practicing can get away from the tuberculosis case. We would like to urge every nursing school to put in a good course in tuberculosis, unless there is one already. Ten lessons is not too much, and they should contain some lessons on home economics and sanitation. A good knowledge of tuberculosis will also help the nurse to protect herself against massive infection, and disease.

In Conclusion: Infection is all but inevitable for our nurses in general hospitals. This can be detected by the simple tuberculin testing, which should be repeated every year. Whether tuberculosis disease will follow depends upon two main dangers; which are largely avoidable: (1) Frequent massive dosage of bacilli, through careless or ignorant handling of the coughing and possibly tuberculosis patient and his excreta and (2) the lowering of resistance and general well-being of our nurses.

We plead for a better training in tuberculosis for all nurses. This would not only protect themselves, but it would help much in the general anti-tuberculosis program which is being launched through the earnest efforts of Lady Linlithgow. Cooperation of existing hospitals and dispensaries by setting aside small wards for the hygienic, medical and surgical treatment of the clinic patient, is very much needed. The training for home visiting—the third necessary branch of an adequate anti-tuberculosis unit, is a problem for which we tuberculosis workers invite advice from your Association.

MEN NURSES' SECTION.

PULMONARY TUBERCULOSIS.

Mr. Samuel, Nellore (Man Nurse).

Pulmonary Tuberculosis. It is a highly infective and infectious disease. The disease is commonly distributed all over the world. It was supposed the Moses the Prophet pronounced the disease as a curse on the Egyptians for disobedience. Tubercle Bacilli is the cause for the disease.

The diameter of the organism is $1/80,000$ of an inch and length is $1/6,000$ to $1/16,000$ of an inch. It is so minute, cylindrical in shape that we cannot see it with our naked eye. When a consumptive coughs, several hundreds of Bacilli suspend in the air for 30 minutes within a radius of 15 to 30 inches from the patient. An advanced consumptive ordinarily expels 7280 millions of organisms in a day. The organisms retain their virulence for 6 days in moist sputum and 6 months in dry sputum.

Therefore, great care should be taken with regard to prevention and infection of the disease. Infection is ordinarily brought about