

THE HEALTH CARE OF HOSPITAL PERSONNEL*

L. FEITELBERG, M.B., B.CH. (RAND)

Assistant Medical Superintendent, Addington Hospital, Durban

The term health is defined as a state of soundness of body and mind. The term personnel is defined as the staff or hands of an institution or service or business, as opposed to its equipment or plant. Both require care, but do not treat your staff as equipment.

Hospital personnel can conveniently be divided into professional and non-professional staff. In both sections different racial groups may be employed. In every hospital staff members are exposed to hazards not met with in everyday life, and therefore the health care of hospital employees must of necessity involve certain protective measures which are not generally adopted outside of hospitals.

Selection of Staff

We have compared equipment and staff. In the same way as you are careful in selecting your instruments and equipment so you should be careful in selecting your staff. Unfortunately, in many parts of the country, owing to man-power shortage, hospitals are compelled to employ persons who are not in any way really suitable for the particular posts they occupy, and who may in fact be suffering from ill-health.

Medical Examination. When possible, applicants should be examined at the hospital where they are to be employed before their acceptance. If this is not possible a medical certificate on the prescribed hospital form should be submitted by an outside doctor. The importance of a careful examination and past history cannot be too strongly stressed. Applicants are notorious for minimizing previous or existing ailments. If necessary confidential reports must be sought from outside sources. Hospitals should be as searching as insurance companies in the questions and examinations. A useful guide to accepted minimal standards is the Public Service circular on medical examinations. Applicants should not be rejected on medical grounds without careful assessment and consideration. In cases of doubt consultations with specialists should be arranged.

PROPHYLACTIC MEASURES

Having selected good healthy incumbents we must strive to protect them from the inevitable hazards of hospital life. These vary with the different types of hospitals, e.g. isolation hospitals, non-European general hospitals, tuberculosis hospitals, leper institutions, etc.

One must, of course, not forget the artisan staff and persons exposed to X-ray radiation. It is, however, the medical and nursing personnel who by reason of their number and greater exposure to infection, present most of the health problems.

X-ray Examinations

A routine chest X-ray should be done on enlistment and yearly thereafter in a general hospital. In a tuberculosis hospital or where staff deal with tuberculous cases in a general hospital this should be repeated at 6-monthly intervals.

* A paper presented at the South African Medical Congress, Durban, September 1957.

This is important both from the point of view of health protection and of indemnity.

Weight

All members of the staff should be weighed at least once a month and any undue loss of weight should be investigated.

Vaccination

In some hospitals revaccination is carried out as a routine, in others evidence of previous successful vaccination is accepted. In all non-European hospitals re-vaccination is a necessity. The technique is well known; it is advisable to clean the site with a quick-drying agent such as acetone so as not to inactivate the vaccine. Persons exhibiting 'reaction of immunity' need not be re-vaccinated.

Typhoid-Paratyphoid Inoculations

In non-European hospitals nursing personnel *must* be protected. In most European hospitals the incidence of typhoid is low, but in my opinion the inconvenience caused by the two injections is minimal and staff should be urged to avail themselves of the protection.

Technique. 0.5 c.c. of the typhoid and paratyphoid A & B vaccine (TAB) is injected subcutaneously and 2 weeks later 1 c.c. of the same vaccine. Before administering the vaccine the plunger must be withdrawn to ensure that no vein has been entered. It is advisable to inject the day staff in the late afternoon and the morning staff in the early morning. Severe reactions seldom occur and mild reactions can be slept off. It is not advisable to give 'injectees' A.P.C. tablets to take 'in case' they get a reaction; this may cause them to anticipate symptoms. In my experience the SAIMR products produce negligible reactions. It should be remembered that persons receiving TAB develop positive Widal reactions within 2 weeks.

'Booster' doses of 1 c.c. of TAB may be given every year, or the full immunization may be repeated at intervals of 2 years.

Diphtheria Inoculations

Routine Schick tests are performed on all staff. Those exhibiting a positive test are given 0.5 c.c. of A.D.F. (adsorbed dissolved floccules) followed 6-8 weeks later by 0.5 c.c. of DF (dissolved toxoid-antitoxin floccules); both injections are given intramuscularly or deep-subcutaneously.

Yearly booster doses of DF should be given to those frequently exposed to diphtheria or alternatively yearly Schick tests can be carried out and positive reactors injected.

The *technique* of the Schick test is well described and illustrated in the pamphlets of the South African Institute for Medical Research (SAIMR). Briefly, 0.2 c.c. of heated toxin is injected intradermally into the skin of one forearm, as a control; and 0.2 c.c. of unheated toxin is similarly injected into the other forearm. Readings are made after 24 hours, and further readings on the 3rd and 4th days and in some cases up to the 7th day.

Interpretation. Very often after 48 hours no redness or reaction is seen on either arm; these cases are usually negative and need not be seen again. However where redness occurs on the toxin side, or on both sides, further readings at 72 or 96 hour intervals must be taken. In a true positive the redness on the toxin side is usually more marked and persists longer than the pseudo-positive reaction on the control side. Unlike the Mantoux test a *positive reaction indicates susceptibility (lack of immunity)*; that is to say, the toxin has not been neutralized by the subject's antitoxin.

Mantoux Test

Several tuberculins are marketed. The Koch's Old Tuberculin (SAIMR) and Purified Protein Derivative (Park Davis) are commonly used. The usual initial strength used with the SAIMR product is 1 : 1,000, which is injected intradermally. If negative the strength may be increased. Similarly the Park Davis product is used in different strengths; viz: 1st, 2nd and intermediate strengths. A positive reaction is indicated by a palpable induration of oedema 6-8 mm. in diameter. Readings should be made after 48 and 72 hours.

A positive test usually indicates immunity in the adult, but may of course indicate activity.

Negative reactors should not be posted to tuberculosis wards. Repeat tests should be done on them from time to time, and they should be regularly weighed and their blood sedimentation rates taken. If at any time they convert to positive they should be examined and X-rayed again and their blood sedimentation rate taken. According to the findings their hours of duty and rest may have to be completely revised.

B.C.G. vaccine is not, as far as I know, used very much in South Africa as a prophylactic measure.*

Poliomyelitis Immunization

It has been generally accepted that the value and safety of the Poliomyelitis vaccine as made by the South African Poliomyelitis Foundation is beyond doubt. Imported vaccines such as that made by Park-Davis have also been used in this country without any ill effects.

A recent analysis by Mitchell¹ in Cape Town showed that the incidence of poliomyelitis per 100,000 children under 10 was 464 in the unvaccinated and 33 in the vaccinated. This represents a 90% level of effectiveness.

At Addington Hospital a questionnaire was sent to the parents of the junior nurses asking if they wished to have their daughters immunized when the vaccine became available. While we were awaiting the supplies of vaccine the bloods of all the student nurses and, later, the trained nurses, were sent to the Poliomyelitis Foundation for examination for immune bodies. Those showing immune bodies to all 3 types or to types 1 and 2 were not subjected to immunization; the others were immunized according to the wishes of the parents.

The figures were interesting; in the junior groups 43% required no injections on the above basis and in the senior trained staff 63% were similarly immune. Only 4.9% exhibited no antibodies to all three types. There seemed to be no relationship to the presence of immune bodies in those

who had suffered 2 years ago in the outbreak of disease resembling Icelandic disease.^{2, 3}

Immunization is carried out by giving 3 subcutaneous injections each of 1 c.c. at intervals of 1 month between the 1st and the 2nd and 6 months between the 2nd and 3rd. In those known to be sensitive to penicillin 2 doses of 0.2 c.c. are given intradermally several hours apart. This process is repeated at the same time intervals as the routine method. The injections can be given during an epidemic. One nurse developed poliomyelitis 1 week after an injection, but she had been in contact with a proven case, unknown to herself. Before injection all subjects are questioned as to polio contact or penicillin allergy.

Before passing from special prophylactic measures to general measures I should like to mention some hospital departments that require particular attention:

1. *X-ray Department.* The importance of radiation hazard cannot be overstressed. In a large hospital the Senior Radiologist undertakes to check on the blood counts of his staff to ensure that they are not over-exposed to radiation. To keep a check on exposure, the staff may wear sensitive film 'badges' which are periodically processed and compared with a standard, or surveys of radiation scatter can be done by the Council for Scientific and Industrial Research.

2. *Kitchens.* The staff employed in the kitchens should be subjected to the usual routine examination, and in addition V1 tests should be carried out in order to exclude possible typhoid carriers. Scrupulous cleanliness should be insisted on and no member who leaves the kitchen for whatever reason, should be permitted to re-enter without washing his or her hands.

3. *Workshops.* All artisans and casual workers should be taught how to avoid accidents by word of mouth and by illustrations prominently displayed in the workshops. The importance of reporting accidents officially and making preliminary W.C.A. reports is obvious. W.C.A. reports should also be made on certain illnesses contracted in the course of duty; e.g. tuberculosis in a doctor, nurse, mortuary attendant, orderly or ward domestic.

4. *Laundry.* Care should be taken that potentially infective linen is not sent to the laundry before it has been suitably treated.

General Measures

Adequate accommodation and good food are essential for staff who live in. In some hospitals, living-out staff are compelled to take at least one meal a day at the hospital. Recreational facilities are equally important. Regular leave should be insisted on. Some Superintendents shield behind the dictum, 'Leave is a privilege and not a right'; but in my opinion leave should not be regarded as a privilege but a 'must'.

Hygiene. Every hospital should have a Hygiene Officer on the staff or, alternatively, one of the medical officers should be deputed to supervise the general hygiene of the hospital.

SICK STAFF

In a small hospital the responsibility for the health of the staff can usually be delegated to one particular medical officer. In a large hospital it is advisable and practical to divide the work among two or more medical officers all of

* For some years at the City Hospital for Infectious Diseases, the Brooklyn Chest Hospital and the Dr. A. J. Stals Memorial Sanatorium, Cape Town, Mantoux-negative nurses have been immunized with BCG as a routine measure.—*Editor.*

whom are available at the same time. Where possible the medical officer should be well experienced and of senior status.

Suitable consulting and examination rooms must be provided and sick parades should start at an early hour in the morning so that those who are fit to return to duty do not waste time waiting for the doctor. Facilities for sick staff to report for illnesses that manifest themselves after sick parade must also be available. The attitude, 'Get sick before 9 a.m. or wait till tomorrow', is a dangerous one that unfortunately exists in many hospitals.

The head of the department to which a sick member of the staff belongs (or a deputy) should be informed that the staff member has reported sick, and of other facts that he officially needs to know. The sister who assists the medical officer should report back to the head of the department at the end of the sick parade indicating the names of those admitted and those put off duty. The diagnosis should not be disclosed to all and sundry.

It is desirable that the services of consultants on the staff of the hospital be available; but all requests for consultations should be made through the medical officer who conducts the sick parade. In turn the report should be sent to him in the first instance. The staff doctor should be regarded as the family general practitioner who is always in the picture.

Ward accommodation, separate from the general wards, should, if possible, be provided for staff. Accurate records of all attendances, injections, reports, X-rays, etc., should be maintained. Staff in general and nurses in particular should not have access to their clinical records. However, as with any patient, an explanation of the diagnosis is essential.

Living-out staff who absent themselves because of illness should produce a medical certificate.

Personal Background. It is most important to get to know your staff. Have they any domestic worries? When did they last have leave? Are they afraid of the Sister in the ward in which they are working? Are they on day or night duty? Have they any pay queries that have not been settled? Are they really suited to the particular work they are performing? In short, are they happy in the service?

CONCLUSION

The object of a hospital administrator should be to keep down the staff sickness rate in his institution. In his work to this end comparative figures from other similar hospitals are useful. Measured in terms of sick pay alone the annual cost of staff sickness must be enormous.

REFERENCES

1. Mitchell, F. K. (1957): *S. Afr. Med. J.*, 31, 671.
2. Hill, R. C. J. (1955): *Ibid.*, 29, 344.
3. Editorial (1955): *Ibid.*, 29, 331.