

Cross Infection in Hospitals (4)

By

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Maternity Ward and Nurseries

Within the last thirty years the menace of puerperal fever in hospitals diminished considerably with the development of better obstetric techniques and organisation of the maternity services. But, it is important to recognize that it is still a factor to be reckoned with. Urinary and puerperal infections are seen most, with phlebitis and mastitis taking second and third place. The only explanation is that patients in open wards exchange bacteria freely and if many persons do many things for many patients, cross infection seems inevitable.

New born infants, who, under normal conditions are bacteriologically sterile at birth, are early victims of cross infection. Reports are appearing more frequently of hospital infection among new born infants. In the main, these are cases of minor staphylococcal infections with organisms resistant to antibiotics. Most of the infections are very trivial with few exceptions but it may lead to an infant and its mother remaining longer in the hospital. The possible causes of infection are (1) diminution in baby's immunity leading to an increased susceptibility, (2) over-crowding in nurseries and over work of nursing staff associated with the high staphylococcal carrier rate found among hospital workers. In New Zealand the hospital infection is almost eliminated by allowing mothers to nurse their babies in separate rooms of their own. But since this would be quite impracticable, hospitals must direct their efforts to reduce the chances of infection in other ways.

Mother nursing as far as possible and isolation of severely infected babies—since it is perhaps too much to hope that all babies slightly infected can be completely isolated—are ideal measures. But along with that the conventional

use of Castor Oil which the mothers bring from outside should be abandoned. Also the weighing machines, napkins, feeding bottles, feeds, baths, should be scrupulously cleaned and sterilised before use.

Children's Ward

Hospital wards can be very dangerous places to treat infants. It is an undisputed fact that there are great dangers in bringing many infants together. This is particularly due to the fact that children are more prone to infection.

Books, papers, toys especially large wheel toys such as tricycles and motor cars form the chief vectors of infection in children's ward. Children who are well enough to get up may be a potential source of cross infection if they have to spend their day in the general ward. Wherever possible play rooms should be provided; otherwise children should be confined to a particular section of the ward.

Communicable and Infectious Diseases Wards

It has been the practice to provide special institutions for the care of contagious diseases. The control of these illnesses has improved; and in the light of better nursing techniques and the present knowledge of cross infection, there seems little reason why such diseases cannot be cared for in general hospitals. Even in the largest cities, the accommodation provided in such special institutions often stands idle resulting in economic waste and frequently inadequate service. Of late such hospitals have started to allocate the unoccupied wards for the treatment of patients suffering from non-communicable disease.

Many general hospitals refuse admission to patients afflicted with

pulmonary tuberculosis. But at the same time a number of patients with communicable diseases are treated unknowingly in the wards where nurses, other staff and patients become victims to such diseases because they do not take enough precautions and preventive measures while attending to such patients. Advances made in the treatment of tuberculosis particularly "collapse therapy" and other surgical procedures make it readily possible for the general hospital to admit many such patients in certain phases of illness. But special institutions and tuberculosis sanatoria, no doubt, will still be needed in certain circumstances. Similarly the provision of separate hospitals for the treatment of small pox and such other highly communicable diseases cannot be altogether limited since the isolation and barrier nursing are inadequate to control the spread of such diseases.

Prevention of Cross Infection

General Administrative Procedures: Many measures for control and prevention of cross infection now form part of the daily routine of hospital work. When the building is contemplated, the prevention of cross infection should be an over-riding consideration and expert advice should be sought (M.R.C. 1944). The large open undivided wards must be considered obsolete. The wards must be subdivided by partitions where they are long into smaller units, and the distance between the centre of the beds, in the wards having more than one bed, must not be less than 8 feet. Especially in children's or infectious diseases hospitals at least half the beds should be in individual cells; the rest being in small units. Moreover adequate facilities should be provided for toilet of patients, wash basin near lavatories, baths and showers and the means for disinfection of the same. It is very important to have separate clean and dirty sluice room accommodation, enough cloak rooms and storage space. All these rooms and wards need to be well equipped. Nurses must be provided with adequate means for washing their hands. The hospital staff should be supplied with enough uniforms.

In most of our hospitals, more provision for the isolation of infected and infective patients is necessary. Isolation nursing has two main functions; viz., to prevent the spread of infection from infectious patients and to protect those who are prone to infection. Children would be given priority of cell accommodation. Cell isolation in itself is not enough to eliminate cross infection, but must be accompanied by careful isolation nursing. The cubicles should be so constructed that they can be easily and quickly sealed for fumigation. The ventilation should be such as to minimise the chance of infectious agents being carried into corridors or adjacent wards. Cruciform arrangement of cubicles with a central common servicing department and outside corridors will solve the problem entirely. Where cell accommodation is insufficient, selected patients should be nursed in the open ward by the isolation nursing technique. This technique is for the prevention of contact infection and it is not able to eliminate air-borne infection. The bed or cell of any patient for whom the full precautions are essential should be marked conspicuously.

Admission of patients should be limited to those who necessarily need hospitalisation for treatment and nursing care particularly in the case of children. Patients should not be retained in hospital longer than their condition demands. Thus a reduction in over-crowding and consequent over-work of staff will enable the nurses to maintain a high standard of medical and surgical aseptic nursing technique in wards.

To avoid over-crowding in the waiting room of out-patient department, the appointment system should be adopted and there should be separate waiting rooms for the patients in each clinic. If they assemble at the dispensary, they give scope for mixing of all types of patients suffering from various diseases and spread of infection. This can easily be eliminated if the sisters-in-charge of the clinics collect all the prescriptions and send them on to the dispensary through a dumb waiter and receive back the medicine from the dispensary through

the same channel. This will enable the patient to wait near the clinic.

The hygiene of many out-patient departments of modern hospitals requires immediate attention and improvement in connection with disinfection of clinical thermometers and spatulas, provision of individual bed clothes for examination rooms, provision of washing facilities in toilets, staff amenities, careful collection and disposal of specimens obtained for examination, sterilization of instruments and bowls, adequate attention to ventilation and cleaning.

Admission

Careful arrangements should be made for admitting of patients. The patient should be received first to an admitting room where a history should be taken and examination made by a medical officer. The decision can be made after that regarding his admission to an open ward, or to a segregation or isolation block on account of infectious condition, or of recent contact with infection. The patient can be examined on a couch covered with a disinfected blanket. Later he can be taken to the ward in this blanket where if not soiled it can serve as his bath blanket. In the admitting room or in the ward early pathological investigation should be made about any infectious condition of the discharges, secretion or excretion.

Duty Rostering

While arranging duty to staff, both nursing as well as others, cross infection hazards should be borne in mind. Sufficiency of trained staff is an important factor in the control of cross infection. The practice of employing runners at night between wards and deputing nurses from out-patient department for duties to nurseries or dressing unit should be avoided.

Immunisation

In case of long stay patients, especially children who had not been previously immunised for diphtheria, small pox and pertussis and who have no history of previous attack, active immunisation should be considered advisable.

Chemotherapeutics and Antibiotics

The sulphonamides served well not only for the treatment but for the prevention of haemolytic streptococcal infection. Penicillin was also confidently expected to deal equally effectively with staphylococci, and at first it did so. But now often fails this purpose, as may most of the other antibiotics. Staphylococci are the most resourceful of all bacteria; they can acquire resistance to almost any chemotherapeutic and antibiotic agents. The indiscriminate use of antibiotics helped them to acquire this resistance against any of them. Moreover they have a great tendency for epidemic spread and for prolonged survival in any closed environment. So, chemotherapeutics and antibiotics have complicated rather than solved the problem of cross infection in hospitals and should not be used as a substitute for good medical and nursing practice.

Visitors

Visitors may introduce infections to patients or may incur the risk of exposure to infections. Visitors should be advised either on the visitors admission ticket or on a notice at the entrance:—

"It is in the interest of patients that persons suffering from colds or sore throats should not visit them; in case of necessary visits, those suffering from these conditions should ask the nurse in charge for a face mask and should wear it through-out the visit."

In maternity and children's wards visiting should be limited to near relatives and where visiting is inadvisable they should be informed of the facilities available for personal contact by interview or telephone with the ward sister. Children should not be allowed to visit infectious disease wards and maternity units. Face masks and gowns should be available for visitors.

Staff Health

An experienced physician should be responsible for the health supervision and keeping of health records of all hospital workers. All workers should have a

Contd. on page 162)