

Cross Infection in Hospitals (1)

By

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Definition

"Cross-Infection" has been defined as "Any infection acquired by a patient in the hospital environment. Clinically it is an infection arising during the course of another illness for which the patient was originally admitted to hospital, and may attack the respiratory tract, gastro intestinal tract, wound, skin, or mucous membrane, or be manifested in one of the specific fevers".

Bacteriologically it implies the acquisition by a patient of pathogenic micro-organisms not present on admission to hospital.

According to these definitions all the infections recorded other than those from which patient was already suffering or which was incubating at the time of admission to hospital, would be "cross-infection".

It is with this meaning that the word "Cross-infection" is used throughout our discussion.

History of Cross Infection

The conquest over infectious diseases during the past hundred years is a wonderful triumph. But in spite of the advent of asepsis and antisepsis, the evolution of the dust free operating theatre, isolation and barrier nursing, separation of children's and maternity hospitals from general hospitals, use of chemotherapeutics and antibiotics and improved methods of sanitation, infection transmitted within our hospitals is still a serious problem.

Our hospitals, the workshop which has enabled us to achieve the triumph have also, unfortunately, been places in which grievous harm has frequently come to a great many people. Patients admitted for one complaint, often one that was not a threat to life, perhaps, a cleft palate, a hernia, enlarged tonsil,

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Men Nurses of the King George Hospital presented the subject most effectively and requests have been received asking for publication of the paper.

Being a lengthy paper, it has been decided to serialise it. Ed.

or pregnancy—have contracted some infectious and sometimes fatal disease. This problem calls for much more investigation and well directed preventive measures.

With the revival of learning towards the close of the fourteenth century, medicine and hospitals began to grow on a large scale. During the next two centuries they made only interrupted progress because of the Reformation and retrogression. In the 19th Century, although numerous hospitals sprang up all over the world, the first half of that century stands as a dark period in hospital history.

The dawn of the 19th Century found surgery also in a deplorable state. Pain, haemorrhage, infection and gangrene were rife in the wards. Healing by first intention was practically unknown, for in the midst of such infective surroundings, the surgeons did not dare to close the wounds or allow adhesions. Mortality from surgical operations was very high and mostly due to cross infection—a nightmare to both doctors and nurses. Pus became a thing to be favoured and received the name "Laudable Pus". All these factors set up a vicious circle in hospitals which continued upto the middle of the century when the combined work of Lister, Pasteur, Semmelweis

(Contd. on next page)

Greetings from President ICN

In extending my good wishes to nurses throughout the world, I am reminded that in most countries this is a season for giving and receiving of gifts. As nurses we treasure our privilege of "giving" generously to those for whom we care. May we strive for increasing wisdom to give with such understanding and compassion that the receiving of our gifts will bring comfort and joy as well as improved health.

To achieve our goals we need to work closely with all our colleagues in the health team as well as to develop an understanding of the general public—both the experts in public relations as well as the general citizenry. For

all this we need the help and the facilities of our national nurses' associations.

Through this greeting I send my good wishes to our member organizations and to each of the nurses whom they represent. I am confident that in giving strong support to your association throughout the coming year you will GIVE more effectively to the patients and the community, and the citizens will continue to RECEIVE richly throughout the year, and the years to come.

Affectionate greetings to each member for an active and eventful 1959.

AGNES OHLSON
President,

International Council of Nurses.

Cross Infection in Hospitals — (Contd. from page 41)

and Florence Nightingale, the leading benefactors of humanity, completely revolutionised the entire hospital outlook.

Semmelweis was the first to reduce the great mortality rate from puerperal fever in lying-in hospitals. Pasteur and Lister were two of the greatest contributors to modern surgery. For 20 years Pasteur studied the theory of spontaneous generation. He showed that in the absence of living organisms, putrefaction and fermentation cannot occur in organic liquids and that these organisms develop not spontaneously, but from pre-existing cells of the same species that are widely distributed in the atmosphere. With the aid of his microscope he demonstrated the scientific reason for the success of Semmelweis. Thus was born the "Germ Theory", the origin of modern bacteriology and the hospital clinical laboratory.

Meanwhile Lister had been watching Pasteur's work and carried his own work a step further. He showed that wound healing could be hastened and inflammation prevented by the use of antiseptics. He devoted his entire life in promoting his theory that *suppuration was dangerous; that it could be prevented or reduced by absolute cleanliness and use of antiseptics*. He promoted the use of deodorants and frequent changing of dressings in suppurating wounds.

In the last two decades of the 19th Century *antiseptics* began to be supplanted by modern *aseptic* techniques. Of great importance to hospitals, was the introduction by Schimmelbusch and Redard of steam sterilizers and the use of steam under pressure to kill even spore bearing organisms. Many other surgeons made valuable contributions to the field of surgery by the use of masks, rubber gloves, cleaning of finger nails, and sterilization of hand brushes. Every effort was made to prevent the entrance of bacteria into wounds by sterilizing all materials used in the operation and treatment of wounds. The use of pist heat sterilized dry dressings and instruments began to replace wet disinfected dressings and equipment. Similarly surgical procedures progressed from the antiseptic method of Lister to the *non-touch aseptic technique* of today. Many surgeons are of opinion that present day surgical preparation and sterilization has reached its peak and that contamination of clean wounds rarely occur.

Perhaps the only contribution to surgery since the era of these great men has been the discovery of chemotherapeutics and antibiotics, used pre-operatively and post-operatively in the prevention of the old enemy-bacterial infection.

(To be continued)