would not be acceptable in a scientific manuscript are printed in the same journals Exhibits at every major medical convention attempt to influence the physician in his choice and use of antimicrobial products. Patients may suggest and demand the administration of an anti-infective drug.

This latter influence has been of great importance in the demand of the patient to be given a drug, even when it was not at all necessary and perhaps even contraindicated.

The physician therefore is pressed by many, many influences in his administration of an anti-infective drug.

I would like to go through the reasons for the rational use of anti-infective agents.

A patient who has indications of infection can be assumed to have a disease caused by one or more of the following: (1) bacteria, (2) viruses, (3) rickettsia, (4) bedsonia, (5) mycoplasma, (6) fungi, (7) other parasites, protozoa, and so forth, or (8) a host of noninfectious agents, which cause fever and those symptoms which are considered to be significant, or coexistent with infection.

The patient should be treated by methods which will eliminate the etiologic agent as rapidly as possible in order to prevent the progression of disease, the development of complications and death, and to decrease morbidity and expense. If adequate therapy is not begun promptly, the disease or its sequela may become irreversible.

It must be emphasized that any bacterial infection is potentially a serious illness which, if it is inadequately treated, may result in death.

This is true of any bacterial infection, that it may proceed to death, which is not as true as some of the other infectious diseases, for example, the viruses. If, for example, the disease is caused by Streptococcus hemolyticus, the possible complications are bacteremia and infection of other areas of the body and may result in the following: acute glomerulonephritis with renal insufficiency, rheumatic fever, rheumatic heart disease and bacterial endocarditis.

Mr. DUFFY. Doctor, how long would it take this course of action to develop?

Dr. WISE. The acute glomerulonephritis and rheumatic fever can occur within a few weeks. It may require a period of years up to, let's say 5 through 15 years for rheumatic heart disease, and bacterial endocarditis may occur after the rheumatic heart disease at any time, as late as 30 years later, all having started with the initial stimulation by the one infection.

Infection with Staphylococcus aureus may advance to bacteremia and the development of metastatic abscesses in the bones and viscera. Pseudomonas and Escherichia may cause bacteremia with acute peripheral vascular collapse, and death. These may spread and eventually cause fatal illness unless they are appropriately treated before becoming irreversible.

Next I would like to discuss the principles that should be used in the rational use of anti-infective agents.

An optimum specific therapy can be selected for these common but malignant bacterial infections only when the etiologic agent is identified or, if identification is impossible at the time the physician sees the patient, then it must be selected when excellent clinical judgment is used to determine the most probable diagnosis.