Some require different concentrations of antibiotics, and some require combinations of antibiotics. At the bottom I have listed viruses and the other etiologic agents which cause infectious diseases.

In table 2 I have attempted to demonstrate the complexity of the anti-infective agents. And it was mentioned by Dr. Hewitt, in the beginning penicillin was effective against gram positive, and streptomycin which was effective against gram negative bacteria. I have listed on the left-hand side antibiotics which we now have that are effective against gram positive bacteria, and in the right-hand column antibiotics which are effective against gram negative, and some of the gram positive bacteria.

I have classified them to show you the number of different penicillins and number of tetracyclines and the number of the cephalosporins and the macrolides.

Senator NELSON. May I ask, do each of the various penicillins and tetracyclines listed, have a specific different use?

Dr. WISE. Under the penicillins one can come to the conclusion that each one has a specific use. Penicillin G certainly has its own use, which is different from the other penicillins. Methicillin has its own use, which is a bit different from the others, such as oxacillin, cloxacillin and Ampicillin. Ampicillin has its own specific advantage over the others. And there would be in a patient a specific type of infection in which the knowledgeable physician would choose specifically the one antibiotic.

My answer to that in regard to tetracyclines, I would say that there is less specificity or differences between all the tetracyclines, one can almost state that they are pretty much alike with some very minor differences.

Does that answer the question?

Senator NELSON. That is what I was trying to get at. Are the various tetracyclines listed simply other names for the same generic, same compound?

Dr. WISE. These are generic names.

Senator NELSON. Each is a generic name?

Dr. WISE. I have used no trade names in this list.

And then I have listed those agents which are used for the fungi, the bedsonia, the rickettsia, and the myoplasma. There may be some additions to this. But this serves as an example to give the committee an idea of specificity in the use of antibiotics.

The anti-infective agents should be selected on the basis of:

(1) Early identification of the microorganism if possible.

(2) In case identification is not possible, therapy should be selected on the basis of clinical evaluation.

(3) Specific treatment should consist of one or more drugs as indicated for the etiologic agent and the characteristics of the disease process in the individual patient.

May I enlarge upon that just a bit. A patient with a staphylococcus infection of the skin, let's say a small boil, could be treated by an oral antibiotic such as one of the semisynthetic penicillins swallowed orally. The goal here would be simply to prevent spread from that small localized site, and it would heal. However, if the same organism was present on the heart valve, or present, let's say, in an abscess in