MEDICINE

Robots May Help Doctors

Automation is beginning to play an important role in medicine, including the fields of preventive medicine, instrumentation and hospital care.

➤ AUTOMATION'S role in the hospital of the future can be a big one, but we will still need the doctor, Dr. Louis Orr, president-elect of the American Medical Association, said.

Our rapidly expanding population will require either more care from more doctors or some means by which people can maintain health and, therefore, need less medical care, he told a symposium at the Atomedic Research Center, Montgomery, Ala.

Automation linked with preventive medicine appears to be the answer, he said. Doctors should look into the possible medical application of the automation age, he added.

For instance, the digital computer can store and interpret medical knowledge accumulated within the past 50 years. Medical science has accumulated a tremendous amount and complexity of published data. Most of this is doomed to wind up on some dusty library shelf unless a method more rapid than human skill can make it available for quick reference, he pointed out.

Centralized electronic file could store existing knowledge on disease symptoms and treatment. Thus a doctor could "feed" the symptoms into a computer and await an answer advising treatment.

Regardless of the powers of automatic machines, however, doctors would be a necessary part of the automation picture. Some patients and some diseases just do not respond to impersonal treatment either from a doctor or a machine.

This human need for personal contact is what makes the practice of medicine an art as well as a science, he said.

Dr. Orr expressed the belief, however, that automation can supplement the doctor's memory and facilitate his access to the wide knowledge available to him. Likewise automation can lower the "hotel" aspects of hospital bills.

For instance, the nursing profession is usually responsible for many bookkeeping functions in the hospital. Automation can solve this problem. Even new methods of laundering could cut expenses that are now pushing hospital rates ever skyward.

Other foreseeable cost-cutting advances for hospitals of tomorrow include disposable sheets, towels, gloves, masks and other linens.

Doctor's Black Bag

➤ MEDICINE as we know it today is primitive in some respects.

The instruments in the doctor's little black bag today are the same instruments that were carried there 25 and 50 years ago, said Dr. John H. Heller, director of the New England Institute for Medical Research, Ridgefield, Conn.

Our scientific technology has improved vastly, yet few of the newer tools have been incorporated into the practice of medicine, he asserts. Doctors still pinch and punch patients to determine hollowness of the chest.

Instruments are available today, or can readily be made, that would streamline the medical tool box and remove much of the guess work that is now necessary.

Dr. Heller said most medical advances have occurred through "fortuitous happenstance." Even today one of the world's oldest and most commonly used drugs, aspirin, is still little understood by scientists. No one knows just what aspirin does to the body, yet the beneficial aspects of this substance are common knowledge.

"Imagine what could be accomplished if we knew what we were doing," Dr. Heller said at a recent meeting of the second annual conceptual symposium of the Atomedic Research Center.

There are two methods by which men can gain medical information. One consists of simply stumbling upon something, such as tranquilizers, which were originally designed for the purpose of relaxing muscles. It was accidentally observed that the drugs also had tranquilizing effects upon the patient. Today scientists do not yet understand just why tranquilizers tranquilize, Dr. Heller stressed.

The other method of obtaining medical information is, of course, to look for it, he continued. This consists of more basic research into the why's and wherefore's of the human body's components, living cells and molecules.

Dr. Heller expressed the belief that only when man understands the molecular structure of the body cells and the particular role each molecule plays will doctors be able to begin to understand such diseases as arthritis, cancer, heart disease and others, and thus be able to prevent them from occurring.

Hospital Kitchen Costs

➤ THE MENU that may be served to future space crews of this country may also be served to the ordinary citizen when he is hospitalized. One of the expensive items in hospitals of today is the kitchen.

The experimentation going on in reconstituting foods for men in space flight vehicles may produce nourishing and palatable diets for hospital patients, Oron P. South, technical adviser to the board of directors, Atomedic Research Center, suggested.

Hospitals can benefit tremendously from this development if these foods can be produced in factories specifically designed for the purpose, he said at the second annual conceptual symposium of the Atomedic Research Center.

Present work in the field of irradiated, and therefore preserved, foods, suggests that it might be possible to eliminate completely the kitchen function in the hospital of the future. Meals could be centrally stored or placed in individual rooms and prepared when the need arises.

Commenting further on the continuing rise in the cost of hospital maintenance and care, Mr. South cited these atomic age improvements that could be utilized by hospitals: computers to store the history of each patient including pulse rate, heart beat and information about X-rays and other pictures; the physiological transducer which offers to doctors the chance to measure some of the vital functions of the body, much as some of the vital functions of a missile are now measured.

With combinations of these machines doctors will be able to pull together simultaneously all of the functions of the body for one particular period of examination.

One of the more fortunate aspects of establishing a hospital that could employ all of these modern technologies is the fact that each individual device is already a reality. Nothing has to be invented before plans such as these can be begun, Mr. South pointed out. Instead, more intensive use in some cases, or a completely new application in others, is required.

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AGRICULTURE

Corn Cob Makes Garden Mulch

See Front Cover

➤ AN ALL-ORGANIC garden mulch has been developed using corn cobs.

The heart ring of hybrid corn cob is the new material for the garden mulching product developed by Cargill, Incorporated. In the photograph on the cover of this week's SCIENCE NEWS LETTER, the firm and highly absorbent heart ring can be seen encircling the pithy core. Surrounding the heart ring are the "beeswings," sockets of filament that grip the kernels.

In production the cob is ground, the heart-portion separated and its particles reduced to granule size. Controlled processing sterilizes the granules under 200 degrees of dry heat and prevents weed seed germination. The material is then sprayed with an organic additive to help prevent nitrogen deficiency and to aid bacterial action.

The material is described as being useful for surface mulching and, when spaded under, for soil conditioning for growing flowers, lawns, shrubs, fruits and vegetables. When used as a surface covering, one cubic foot of the mulch is said to immediately absorb and store 4.4 gallons of moisture. In contrast, peat moss absorbs water slowly and when saturated holds 3.4 gallons. Rough-crushed cobs, another mulch can hold even less, only 3.2 gallons.

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