



**THE NAME OF THE GAME** is equal employment opportunity at Duke, and a game actually is used to help emphasize the need for increased awareness of equal opportunity philosophy, civil rights legislation and management responsibilities. About 175 medical center employees already have participated in workshops organized by Dolores Burke, director of Duke's Equal Opportunity Office, and training for hospital personnel is scheduled to begin Monday. The training is particularly for persons involved in interviewing and hiring of bi-weekly

personnel. An especially useful tool in the training has been a game developed and marketed by the Motorola Corporation which uses case cards that challenge participants to make decisions covering a wide range of employment situations. At left, Diana Maginnes of the Equal Opportunity Office sets up a game at one of the sessions. Deep in study on what decision to make (above) are Jimmie Morris, on the left, a data processing coordinator, and Dot Reep, data processing supervisor. (Photos by Parker Herring)

## Computerized EKG reading improves quality

By Parker Herring

Reading the ups and downs of the human heartbeat as recorded by electrocardiograms (EKGs) has historically been a time-consuming and tedious task. EKG interpretations provide physicians with valuable knowledge of how the heart is functioning, knowledge that is useful in the diagnosis and treatment of heart disorders.

Before computerization, this knowledge was gleaned by physicians who interpreted data by "reading" the black lines from EKG tracings. But since December of 1976, EKGs done at Duke have been read first by a computer, and then overread by cardiology fellows and staff cardiologists.

### Consistency of wording

Increased accuracy is one of the most important benefits of EKG computerized reading.

"From a technical standpoint, computerization has made a marked improvement in the quality of EKG readings," said Dr. Joseph Greenfield, director of the heart station.

Sousin Leggett Clark, senior data technician who is responsible for the function of the computer, noted the effect computerization has made on quality.

"The computer gives us consistency of wording," Clark said. "We have docs from a lot of different locations and they don't always use the same terminology for disorders.

"We've established criteria for certain disorders. The computer uses this criteria consistently in labelling, whereas physicians are subjective and their labels may vary."

Technicians aren't the only ones who can be confused by this inconsistency.

"For example," Clark said, "one patient with a heart condition may be told by a physician that he has 'extra beats' and

another physician may tell that same patient that his heart 'skips.' The computer would interpret that condition uniformly as premature beats."

### Tie-in from patient rooms

The computer is located in the heart station. Technicians use telephone jacks in individual patient rooms to hook the mobile EKG carts into the computer system. Technicians place leads, metal discs attached by connecting cables to the cart, on the patient's body. These leads transmit the electrical impulses from the patient's heart back to the computer in the heart station.

"It takes the computer about 25 seconds to receive data from an EKG," Clark said. "And it takes approximately 20 seconds for the computer to interpret the data, send it out, make a report and

put the finalized data on a disc."

### Teaching aid

The computer works as a valuable teaching aid both for physicians learning to interpret EKGs and the technicians who actually place the leads on the patient.

"Corrections from EKG readings go back to the physicians," Clark said. "So they can learn from the computer.

"It also gives technicians the opportunity to know what results they are getting. They need to know that they are placing the leads correctly," she said. "The computer will show up a misplaced lead, so the technicians have the opportunity to learn from their mistakes."

### Quality control

The computer also provides a quality control printout, a report that provides information on the performance of each EKG technician.

"We give a prize every three months to the technician who has the least errors as reported by the computer," Greenfield said.

"Prizewinners are given a Best catalog and told to pick out something that costs \$25," Clark said.

The computers help cardiologists be more efficient and more accurate because it serves as a double-check on the interpretations of the cardiologists. It also eliminates a portion of the clerical work involved in the processing of EKGs.

"All of the typing part is taken care of by the computer so the delivery of results to physicians is speeded up," Greenfield said.

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**WHAT ABOUT THIS ONE?**—Dr. Joseph Greenfield, director of the heart station, looks over readouts from the EKG computer with Sousin Leggett Clark, senior data technician. The computer, installed in December of 1976, processes some 50,000 EKGs each year. (Photo by Parker Herring)

## Intercom

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## On tour today

Twenty students from the advanced biology class of Pembroke Senior High School are on a tour of the medical center today. The students are accompanied by their teacher, Victoria Stover.