

Computer Network Successfully Initiated

Hospital administrators and electronics specialists from the IBM Corporation are breathing a little easier after deciding this week's long-planned conversion from one computer network to another was "a complete success."

The new network, which has been named the Duke Hospital Information System (DHIS), electronically links patient care units, major service departments and administrative areas so that patient information can be routed throughout the hospital almost instantaneously.

It is replacing the Burroughs/Medi-Data computer system which has been discontinued after four years of service, according to Robert G. Winfree, acting assistant vice president for health affairs (planning and analysis).

Jointly Designed

DHIS was jointly designed and developed over the past year by the staff of the hospital and IBM.

"It provides the hospital with a strong foundation for future development, including applications related to the outpatient clinics, the operating room and resource scheduling, to name but a few," Winfree said.

He also noted that the new system is designed to serve the expanded multiple hospital environment that will exist when Duke Hospital North is completed in 1979.

Medical Center Network

The network consists of 130 display terminals and 70 printers located throughout the hospital, Bell Building, the Eye Center and several buildings in the Research Park complex. The patient care units at the Durham Rehabilitation Center and the Drake Pavilion will be added to the system in the near future.

The successful conversion to the new information system reflects what Mrs. Ruby Borden, R.N., called "tremendous cooperation and team spirit of the Duke staff." Mrs. Borden is acting director of the DHIS office.

"Many people throughout the institution devoted long hours to designing and building the system," she said. "It could not have been done without their strong support and assistance."

Faster, More Accurate

Deloris Evans, data terminal operator on the OB-GYN unit, noted that DHIS is a significant improvement. "The new system is faster, more accurate and requires far

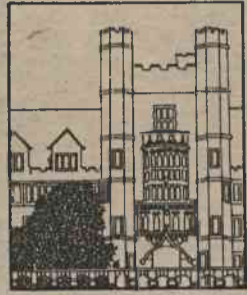
less typing because of the light pen/menu selection process," she said.

Winfree said that IBM's support throughout the project has been a key factor in developing the system. "IBM has shown a total corporate commitment to Duke, and the IBM staff members assigned to the project have been great," he added.

In 1972, Duke became the second hospital in the country to adopt the

complete Burroughs/Medi-Data system. Winfree said that Duke's experience with Medi-Data was important in designing DHIS.

"Over the past four years, we've learned what a computerized information system can — and should — do to enhance patient care and financial management operations in a large and complex environment," he said.



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DURHAM, NORTH CAROLINA

Child Given Sight as Rare Disease Treated

By David Williamson

A Jones County, N.C., child who holds the dubious distinction of being the world's fifth reported case of a metabolic disease known as tyrosinemia type II, has been diagnosed and successfully treated by Duke physicians.

The case is unusual, according to Dr. Lowell A. Goldsmith, because the girl is the first person of Anglo-Saxon ancestry to be found with the condition. At least two of the four earlier patients can trace their roots back to remote villages in Italy's Apennine Mountains.

Rare Condition

"This is such a rare condition that I never thought I'd see another patient with it," said Goldsmith, an associate professor of dermatology. "I thought it was a once-in-a-lifetime kind of thing for me."



DR. LOWELL A. GOLDSMITH

The physician said he saw his first case of tyrosinemia type II, which can cause blindness, mental retardation, and severe sores on the hands and feet of its victims, five years ago at Massachusetts General Hospital in Boston.

There he and his colleagues at the Harvard Medical School were able to discover the cause of the disease and outline an effective treatment for it, but they found no permanent cure, he said.

The Jones County child, like her predecessors in Boston and in more recent medical literature, was found to have very high levels of an amino acid called tyrosine in her blood and in her urine. Amino acids, which serve as building blocks for proteins, are organic compounds essential for human metabolism.

Lacks Essential Enzyme

Her tyrosine level was 22 times normal, Goldsmith said, because she lacks an essential enzyme the liver produces to convert the amino acid into components of skin pigmentation, thyroid hormones, adrenalin and several other metabolic products.

The child's tyrosine had risen to such high levels that it began to crystallize, he explained, and the corneas of her eyes and the outer

layer of skin on her hands and feet started breaking down.

Until she was admitted to the Rankin Ward Clinical Research Unit, the then 15-month-old girl was blind and had the characteristic sores on her hands and feet. In addition, she was threatened with mental retardation.

Low Tyrosine Diet

On the research ward, which is supported by the National Institutes of Health, the child received free medical care and was placed on a low tyrosine diet to reduce the level of the chemical in her body.

Drs. John Reed, associate professor of ophthalmology, and James Sidbury, professor of pediatric metabolism, both worked on the case with Goldsmith.

"Within three days, the little girl's skin condition was improving and her eyes were clearing," the dermatologist said. "After 28 weeks of treatment, she was growing and actively playing, walking and running."

"She had normal vision, and her skin was perfectly normal," he said, adding that while it is still too early to rule out any retardation, her mental development also seems normal for her age.

Cause of Illness

What caused the child, who the physicians are continuing to watch and who may have to remain on the special diet all her life, to become ill in the first place? Goldsmith explained it this way:

"Many of these kinds of diseases occur when both parents contribute an abnormal recessive gene to their child. That's most common when the parents have some sort of close blood relationship."

"Although we haven't been able to determine the exact degree of blood relationship in this case, the fact that the families of both parents have lived in the same area of rural North Carolina for more than 200 years and have intermarried increases the chance of a genetic disease like this one," he said.

Goldsmith said marriages between related villagers in the Italian mountains accounted for the occurrence of tyrosinemia type II there.



KEEPING THE TRAFFIC FLOWING—Traffic to the main hospital entrance is now being effectively limited to vehicles transporting patients and some commercial vehicles. The access gate went into operation on Sept. 28, when the information booth was staffed by Debbie Fletcher, pictured above. Ms. Fletcher said it was somewhat hectic the first day, but now people are used to the new system and it is going smoothly. A Durham native, Ms. Fletcher served 14 mos. in the U.S. Air Force and is now a member of the Air National Guard. She anticipates a career in law enforcement. (Photo by John Becton)