TWO PRESSURES TEST MEMBRANES AT MAYO

The photograph at left shows a test of membranes being made in the artificial kidney center at Mayo Clinic as directed by William J. Johnson, M.D. The system is described in the excerpt below from MAYO CLINIC PROCEEDINGS, Volume 40, Number 6, June, 1965.

To test for intactness of the cellophane membrane the blood chamber is filled with air at a pressure of 300 mm. Hg and the dialysate chamber is filled with air at a pressure of 150 mm. Hg. The pressures are allowed to stabilize for several minutes. There are usually slow leaks between each of these compartments and the external atmosphere. If the membrane is intact, the pressure drop is in a ratio of 2:1 between blood and dialysate compartments. A leak from the blood compartment to the dialysate compartment is indicated by a more rapid drop in pressure in the blood compartment, such that the ratio of pressure between blood and dialysate chambers is less than 2:1 or such that an increase in pressure occurs in the dialysate compartment as air escapes into it from the blood compartment.

Use of the foregoing modifications of procedure reduced the incidence of interruptions of dialysis from 6.3% (16 in 252 dialysis) to 0.9% (1 in 106).

The Seattle Artificial Kidney Supply Division of Sweden Freezer will take part in two widely separated conferences during the month of September. Los Angeles' Ambassador Hotel will be the site of the Fifth Annual Symposium on Kidney Disease, September 22, 1965 under the sponsorship of the Southern California Kidney Foundation. On the other side of the world, the European Dialysis and Transplant Association will hold their second conference at Newcastle-Upon-Tyne, England, September 16th through 18th. Sweden Freezer will exhibit recently developed equipment at both conferences.

It is anticipated that more than 800 physicians will be in attendance at the Los Angeles meeting representing surgery, internal medicine, pediatrics, gynecology and general practice. Representing Sweden Freezer at this meeting will be company president Harvey F. Swenson and public relations manager Charles E. Berrisford.

The European conference will be held in the Physics Department of the University of Newcastle-Upon-Tyne. Robert F. Hager, medical division sales manager and Robert Hilekes, of the company's Amsterdam office, will represent Sweden Freezer at this meeting.

Equipment to be displayed in the Sweden Freezer exhibit will include the new, improved Sweden-Kiil two-layer dialyzer and Speed Clamp and Dialyzer Tilt Cart described elsewhere in this issue, the bedside Console, Sweden-Sage Infusion Pump and at the European show, the Home Tank.

To serve you in the best way possible and hence to accomplish our desired objective, SWEDEN NEWS BRIEFS solicits your contributions of material describing experiences, ideas, problems or questions - anything that might be of general interest to other dialysis laboratories. Address all contributions to the editor.
The general public is being exposed to information on hemodialysis through a variety of media. Articles have appeared in many major magazines and newspapers. The television program described on page 1, should have an audience numbering in the millions. Increasingly the exposure is on a local level to which the observer can more easily relate. The article below is a full page reprint from TRANSIT NEWS, an employee publication of the Seattle Transit System.

Treatment At Home

Artificial Kidney A Literal Lifesaver To Morelli

Seven people at Swedish Hospital decide, literally, "who shall live." Understandably anonymous, these seven comprise the panel that decides which applicants to the Artificial Kidney Center shall have the benefits of this new means of saving lives. From 75 to 100 new patients a year in Washington State need the treatment. At present, there's room for 18.

Erno Morelli, Seattle Transit shop man, is one of the lucky ones. His application was accepted. After months of treatment in the hospital and learning how to operate a portable kidney machine at home, Morelli is now back at his job with Transit.

One of the first to use the new portable machines, Ernie assembled it himself while he and his wife spent two months at University Hospital learning about its use and Ernie's home care routine. Patients without a portable machine must report to a center for treatment about every two days.

The basement of the Morelli home has been turned into a laboratory and treatment room for Ernie. Films taken there will be included in a forthcoming national TV documentary, entitled "Who Shall Live." Produced by Lucy Jarvis, who produced "The Kremlin" and "The Louvre," it will feature other artificial kidney centers in the country. Seattle will be prominently featured because the Swedish Hospital Center is the largest specializing in the maintenance of chronic cases. Its special treatment was developed by Dr. Belding Scribner, professor at the U.W. School of Medicine. A team of University doctors and engineers pioneered portable artificial kidneys for patients' use at home.

Because of his home use machine, Morelli has more mobility than the hospital treated patient. Three days a week he is attached to the machine for about seven hours a session. When he wants to go on a trip, he has a three to four day leeway on his schedule.

The machine cleanses the blood, a job which the kidneys are no longer able to do. Morelli is fitted with two permanent openings in his leg, which tubes are inserted during treatment. One tube draws blood out to be cleansed, one plate at a time. It is then pumped back into the body through the other tube. During the process, heparin is added to the blood to keep it from clotting.

An artificial kidney machine and 100-gallon tank in which the compound is stored. The storage tank has automatic sterilizer.

Walt Greenwood, University Hospital technician, calls on Ernie occasionally to check the wall control panel which keeps a constant flow of compound into the kidneys.

Shirley Morelli gets instruction of caring for storage unit which keeps kidney compound fresh. Advising her is Larry Tyler, who is in charge of home training for Artificial Kidney Center patients.

Three-times-a-week treatment is a family affair. As Ernie relaxes, wife Louise attaches the artificial kidney as daughter Shirley assists.

Ernie has his dinner "in bed," reads, watches TV and visits with friends.

During his 4-11 p.m. tour of treatment three times a week, equipment specially designed also includes a cabinet into which the compound is stored.

All parts coming in contact with the blood must be sterilized and rebuilt.
Only seconds separate the two photos above demonstrating the speed with which the newly improved Sweden-Kiil two-layer dialyzer and Speed Clamp assembly can be assembled or broken down. The new dialyzer utilizes a removable molded peripheral gasket which is fitted to the center board and sealed against top and bottom boards. The resulting soft-seal action requires only one-tenth as much pressure as is necessary to seal present boards. This drastic reduction of required clamping pressure assures longer board life and less board damage.

The peripheral gasket and blood port housing pads are removable for more thorough cleaning and simpler maintenance of the dialyzer assembly. No cementing is necessary. All gaskets are easily removed for cleaning and can be quickly reapplied. A double sealing edge is provided around the entire dialyzing surface.

It is estimated that the combination of improved dialyzer and speed clamp assembly will reduce preparation time by as much as 90%. Speed of assembly is enhanced by pin-indexing top and bottom clamp frames with top and bottom dialyzer boards to insure correct reassembly each time. The same end-to-end flexibility of the standard clamp is found in the speed clamp for better clamping action and adaptation of clamp to dialyzer unit.

Clamp units are pre-set to desired pressure. Thereafter only an occasional check and re-setting is required.

In the unit pictured above the speed clamp has been incorporated into the Sweden Dialyzer Tilt Cart for greater flexibility.
The award winning television production team responsible for last season’s highly rated, “The Louvre” turned their cameras on the subject of hemodialysis last month in the course of filming an hour-long documentary entitled “Who Shall Live,” to be presented on NBC-TV this Fall. The Seattle Artificial Kidney Center (above left), University of Washington School of Medicine, the homes and private lives of the patients and their families were all subjected to the scrutinizing eye of the camera under the direction of Tom Priestly.

Producer Lucy Jarvis (above right) interprets the story of the program in the questioning statement — “100,000 persons in the United States die annually due to kidney diseases; 10,000 could be saved and rehabilitated to near normal, productive lives. Yet only a handful are being saved, why?”

Miss Jarvis says the program will present the problems that confront the patient and his family as to the availability of treatment in Seattle and other cities and the adjustments that must be made when dialysis becomes a part of life. A broadcast date has not as yet been scheduled.

Fred Huleen, corporate director of personnel for the Boeing Company, Seattle, Washington, (right rear), shows a Boeing ambulance to Dr. Belding H. Scribner, professor of medicine at the University of Washington. The Boeing Company presented the ambulance to the university for use in its artificial kidney program. The 1953 Packard, which has only 20,000 miles on it, will be used to carry artificial kidney equipment to the homes of patients.