

Instrumentations Future In The Field Of Extra-Corporeal Circulation

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What is the future (bright or bleak) for instrumentation systems in the field? History shows over the few years of use of the heart lung pump the extremes of instrumentation usage. When open heart surgery first started the amount of Electronic Instrumentation used was large. ECG, at least two pressures, EEG in electrophysiology, perfusion temperature, pressures, flow, etc. Over the years this list has gotten smaller and smaller. Today, this list in many cases is depleted to a simple ECG by the cardioverter unit and perfusion temperature. Pressures used are the cuff pressures taken by the anesthesiologist. Why should there be this change in so few years? Was it due to the fact that excessive monitoring was done in the beginning and this has now resolved to the ideal level? Or is it possible that the instrumentation was so complex and "haywire" that the inconvenience caused was sufficient that monitoring has been

reduced to a tolerable level even though it is less than completely ideal? I would like to believe the latter is the cause. In most cases the monitoring equipment used is of the research type. It is large, in many cases multi-application and either made-up of a number of separate units or is a large rack monitor. One must admit this is less than ideal. With the electronic technology of today both from a circuit and a packaging standpoint this is no longer necessary.

Today it is possible to build complicated perfusion monitoring equipment into the heart lung machine itself. These devices should include an electrical analogue output for recording or as data input to a computer. The list could include temperature - pressure - PO₂ - bubble detection and flow. All these parameters should have alarms. The Patient monitoring could be a permanent part of the OR table and the anesthesiology equipment, & include - EEG - EKG - PB - heart rate and tissue perfusion. With the use of the small computer this

could also give stroke volume, resistance, blood loss and impending shock. With proper instrumentation design this could be accomplished in such a way as not to be a burden on the surgical team and yet would supply data that is very beneficial in the care and monitoring of the patient.

The artificial kidney would appear to be an area that could be helped by the use of the special instrumentation. If the patient cost of dialysis is to be reduced to a more practical level, the process must be made more efficient. One way to achieve this is through the use of imagination, electronics, and instrumentation.

One qualified person properly informed can accomplish more than several qualified people uninformed. Action is required when something is abnormal. Action cannot be instituted until someone is aware that something is abnormal. Systemic monitoring is an answer to being sure one is informed. Minor action early, prevents panic action later.

Northern Midwest Chapter Of A.M.S.E.C.T.

The year April 1965 to April 1966 has been a very rewarding one for the Northern Midwest Chapter of AMSECT. We believe that we have worked hard at not only making our local chapter a good organization but also at achieving the goals set forth by the national organization.

At this time last year we were all busy planning and putting together the National AMSECT meeting which was held at the University of Minnesota Hospitals in Minneapolis last May 15th.

Since that time the Northern Midwest Chapter has been meeting regularly every two months. The attendance for these meetings has been excellent and continues to increase because of the interest the Artificial Kidney Technicians have re-

cently shown.

Our meeting place is rotated for meeting so that everyone in the chapter can become familiar with the different equipment used by the various institutions.

Each meeting consists of a short period where past and present business is discussed. The business period is followed by a lecture given by one of the chapter members about different aspects of extracorporeal circulation or kidney dialysis. These lectures are usually prepared from the book, Heart-Lung Bypass by Galletti and Brecher. Our chapter has purchased two copies of this book for preparing talks and also for use as a text when a question should arise concerning extracorporeal circulation. Following the lecture we usually have an informal

discussion period where new ideas and problems are discussed. A brief tour of the surgical and research areas of the host institution generally concludes the session.

As chairman of this chapter I would like to commend Mr. Edward Berger and Mr. James B. Wade for their unselfish devotion and the enormous effort they have displayed in connection with the publication of this Journal. We are proud to say that they are members of the Northern Midwest Chapter.

I believe that with interest, eagerness, and production shown by the members of this chapter that we will continue to be a very active and contributing chapter of AMSECT.

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Chairman
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