Follow-up on Endoskeletal Article and Questionnaire

The Manufacturers Reply

Summarized results of the survey concerning endoskeletal prostheses appeared in the Summer, 1982 issue of C.P.O. *(Vol. 6, No. 3). These compiled results were circulated among the manufacturers of endoskeletal prosthetic systems. The following responses were received.*

In regards to the "g" response in the additional comments section, [questioning whether the cost is justified] I will submit the following: Endoskeletal prosthetics is a poor excuse to charge more money, only when it is the excuse that it is being charged to the patient. I can also understand being afraid of the dollar sign where it prevails as fiscal remuneration for an excuse, rather than the patient's welfare. Endoskeletal prosthetics have consistently proven themselves a useful tool in developing value in the patients themselves, and in the patient's rehabilitation accomplishments.

Michael T. Wilson, CPO
Medical Center Prosthetics, Inc.

Manufacturers must keep many things in mind when designing and building a modular system: weight vs. strength, added features vs. weight and strength, and cost to manufacture vs. simplicity. Research and development expenses are subsidized only by sales profits. A good example is that tooling for one simple item may run $80,000, while sales and volume of manufacture does not warrant this expense. In summary, manufacturers do have handicaps.

In reviewing question number ten—what changes would you like to see?—we find 19 answers were provided. Eighteen of the 19 have been researched, and four of these are available now. The others will continue to be researched and will be available in the future.

The field of prosthetics has come a long way in the past 20 years; let us look at what is available now in manufactured parts as to what was available in 1962. We at United States Manufacturing Company believe there will be even more improvements in the next 20 years compared to the last 20.

Dan J. Edwards
Sales Director
United States Manufacturing Co.

Otto Bock, along with several other manufacturers of endoskeletal prosthetic systems, was presented with the survey results from the Winter Issue of *C.P.O.* and was asked for a response. While the total number of endoskeletal prostheses indicated as having been delivered to patients was significant, we must offer our opinion that the total of 27 returned questionnaires is a rather poor response and certainly does not represent a consensus upon which to base any conclusions.

Each manufacturer is individually aware of how many endoskeletal units it produces and sells each year, which gives a general idea of market acceptance. Our experience has been that our endoskeletal units sold continue to increase in significant quantities year after year and this trend has shown no sign of reversing. This in itself is an indication to us that endoskeletal systems have attained a definite place in the armamentarium of components available for prosthetic patient management.

A great number of people seem to support the belief that endoskeletal prostheses were designed to replace exoskeletal prostheses. It is certainly not our company philosophy that one is intended to replace the other. Both types of systems have their advantages and disadvantages and it ultimately should depend on the professional decision of the prosthetist as to which system will best fit the needs of each individual patient. Perhaps many of the complaints about endoskeletal systems are due to improper patient selection criteria rather than deficiencies in the systems themselves.

Another source of trouble with endoskeletal systems is the improper application of fabrication techniques. Recognizing this possibility—and being one of the first manufacturers to offer a complete multiple option endoskeletal system for the lower extremity—we developed a seminar program for instruction in these new techniques. In addition, we have developed Technical Information Bulletins, slide programs and presentations for various technical meetings. Despite these efforts on our part, the sheer numbers of prosthetists in this country and their diverse geographical locations make it nearly impossible to personally instruct every one, even if we could increase the size and frequency of our seminars. Basically, we are able to trace many of the problems to not following technical recommendations. In many cases

the problems have been cleared up rather quickly by following instructions.

The prosthetist has the choice of using any of several manufacturers' systems, each with its own unique features. If alignment capability in the definitive prosthesis is desired, an IPOS or OTTO BOCK System can be used. If it is felt that this permanent adjustability is detrimental, the USMC or AFP Systems can be used instead. When the Otto Bock foam cover is too difficult or time consuming to shape, or lacking in durability, there are other alternatives. These include the foam-in-place technique offered by Medical Center Prosthetics, and the option of a prefabricated cover. Choices also exist for the prosthetic skin, such as our nylon stocking, USMC's newly developed cover, or a covering of the paint-on variety.

The foregoing statements are not meant to give the impression that Otto Bock is insensitive to the needs of the prosthetist or, more importantly, to the desires of patients they serve. We recognize fully the need for improvement of endoskeletal systems. The covers need to be more durable and easier to fabricate. The structural and functional components need to be made lighter and more sophisticated. Unfortunately, many of these things are easier said than done, but our research department is constantly striving to develop new and better systems.

We very much appreciate the opportunity to comment on this survey and would encourage a much greater response to such surveys in the future. This type of feedback on a much larger scale could be very helpful to all manufacturers. Along this line, we are wondering what suggestions might be offered for quickly disseminating information on new products or techniques so everyone interested could become qualified to use them for maximum benefit to the patient. If anyone has some workable ideas for accomplishing this objective, we are certain all concerned would benefit greatly.

Jack Hendrickson, CP
Otto Bock

More Endoskeletal Responses Added to Questionnaire Results

Two questionnaire responses were received too late to be included in the compiled results published in the Summer *C.P.O.* One individual reported that 75% of definitive prostheses fit were of endoskeletal construction and the other reported fitting 150 endoskeletal prostheses (actual numbers, not a percentage). Their responses to questions two through nine were very much in line with the majority of others received. Their written responses are included below:

10. What changes would you like to see made?

First respondee:

1. improved covers
2. hydraulic knees

Second respondee:

1. Lighter in weight
2. Improvements in the visual, tactile, and sound aspects of prostheses
3. Longer lasting cosmetic covers, internally and externally
4. For H.D./H.P. prostheses, better sitting ability
5. Standardization of tube sizes and connectors to facilitate "intermarriage" of components
6. More instructional courses by prosthetics/orthotics schools or manufacturers to deal with "practical every-day" problems

11. Additional comments:

First Respondee:

The ability to make either major or even subtle changes in a definitive prosthesis, months or even years after initial fitting, has always appealed to me. The more I use the Bock system the more confident I become of it and I find myself fitting a higher percentage [75% last year, Ed.] . . . every year. I find the poor durability of the cover a minor trade off . . . most of my patients agree. I practice in Montana, so you can guess my patients do not always give their prostheses the easiest use. I am a firm believer in the concept.

Second respondee:

Our first choice of components for any amputee (re: level of amputation, sex, job or environmental factors) is the endoskeletal prosthesis. My first reason for this is ease of maintenance/replacement of components. This single factor keeps patients coming back knowing they can get things "fixed" quickly. In our present rush society this factor cannot be overlooked.

Cosmesis is becoming a more important factor every day, regardless of the patient's sex or age.

For too long, we have, as professionals, trained our patients to think: 'functional restoration is your main objective.' Having been involved with many patients who are "prosthetic failures," I have learned a few very important lessons as to why they are on crutches, in wheelchairs, or have empty armsleeves.

Consumers in general, today, are more educated and interested in knowing their options. The prosthetist has the responsibility to inform his patient as clearly and completely as possible concerning what is available. He may end up referring the patient to a colleague if he does not have the necessary skills to satisfy his client. A satisfied, happy patient is not a side benefit to our existence. It is a must.

Through publications such as this one and many others around the world, we have an obligation to keep up-to-date on new developments as well as contributing our findings in return. It is not necessarily always true that something we are having success with is known to most colleagues. Try and publish articles with photographs and you will be surprised at the response.