

# The Prosthetics Clinic Team

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the increasing complexity of medicine and its related sciences, the day is past when a single man can cope successfully with all the specialized problems in the treatment of injury and disease. The "horse-and-buggy" doctor did an excellent job considering the limited number of drugs and facilities available to him. His results, however, can in no way compare with those obtained at a well-conducted, modern clinic, where a team of physicians as well as representatives of all the allied medical specialties are available. A comparable situation now prevails in the field of artificial limbs.

The basic Prosthetics Clinic Team is composed of a physician, a therapist, and a prosthetist. Workers in other fields, say a psychiatrist or psychologist, a social worker, a vocational counselor, or an engineer, should be available for consultation when the basic team considers that such services are required. Each member of the team has been trained to perform one particular job well, and, despite the considerable education and experience of each of these team members, no one man could be expected to carry out the entire procedure beginning with surgery and ending with the fitting and training of the patient. Although it is not generally stated, the patient himself is also a member of the team, since during the period of fitting and training he must cooperate by carrying out the instructions of the various team members and at the same time make and convey his own observations on the good and bad qualities of the prosthesis.

## THE FUNCTION OF EACH TEAM MEMBER

### THE PHYSICIAN

The physician acts as the chief of the clinic team. His particular training has prepared him

to coordinate various ancillary services in the solution of all types of medical and surgical problems and to follow the progress of the patient until the difficulty for which medical care was sought has been corrected. In the past, this has been known as the "end result idea," more recently as *Rehabilitation*. The physician, in addition to his specific duties, is able to act in this same supervisory capacity in the prosthetics clinic team.

First, the physician can evaluate the general medical status of the patient and either carry out any necessary surgery or, if he is not a surgeon, refer the patient to a properly qualified one. Immediate postoperative care in the hospital is under his direction. Then the prescription for physical therapy, whether preoperative or postoperative, is in his hands, and he is also the person who assumes ultimate responsibility for prescribing the prosthesis.<sup>2</sup> Moreover, the physician supervises evaluation of the prosthesis and renders final approval. And lastly, it is his responsibility to ensure that adequate training in use of the prosthesis is provided, to the end that the amputee may be able to gain the full functional advantages offered by a properly constructed, modern prosthesis.

### THE THERAPIST

The particular field of the physical and occupational therapists lies in preoperative and postoperative training and physical conditioning. The therapist is almost solely responsible for training in use of the prosthesis and usually for details of the checkout and evaluation procedures. These functions, however, are no more important than are those of physical conditioning and training in use of

<sup>2</sup> It must be emphasized that these prescriptions, even though they be signed by the physician, should correctly be the product of consultation by the entire team. It is perhaps in the preparation of these prescriptions that the knowledge of each team member is utilized to the fullest.

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the prosthesis. And hence the therapist is a most necessary consultant in decisions relating to time of fitting, type of prosthesis, and type of postprosthetic training.

#### THE PROSTHETIST

The special problem of the prosthetist, of course, is the actual fabrication and fitting of the artificial limb. Thus he is an indispensable member of the team. His consultation is particularly valuable at the time of prescription of the prosthesis. Using the medical data supplied him by the physician and the therapist, he can give excellent advice as to the relative degree of function that can be offered by different artificial-limb components. With cooperation in this respect, later changes in the prosthesis can be held to a minimum and possibly avoided entirely.

#### OTHER CONSULTANTS

In complex cases, the team will often feel a need for the services of others. It may be necessary to call upon a psychiatrist or psychologist to determine whether the mental attitude of the patient is such that a prosthesis can be used. Or a design engineer may be able to devise a mechanism or component that will be useful in special cases. Finally, the services of a vocational counselor or social worker may be needed in determining some of the future requirements of the amputee.

#### ADMINISTRATIVE PERSONNEL

In addition to the professional services involved, it is mandatory that someone assume the usual administrative responsibilities. An orderly clinic cannot be conducted without someone to schedule the patients' visits, to maintain individual records, and to carry out other administrative functions. This is of course true of any type of clinic operation, but it is perhaps even more important here because of the many factors involved and the numerous disciplines required.

#### PROCEDURES IN THE CLINIC

An amputee appears before the team a minimum of three times, as shown graphically in Figure 1. The first visit is for the purpose of

preparing the prosthetics prescription, the second to evaluate the amputee and his prosthesis before training, the third to evaluate the amputee and his prosthesis after training.

#### VISIT NO. 1

If, in the opinion of the team, the amputee is ready for fitting, a prescription is prepared. If for some reason—medical or otherwise—he is not ready, appropriate therapeutic measures are recommended.

On hand is a preprescription form (Fig. 2) on which have been recorded such data as the cause of amputation, the patient's background, his physical limitations, and his desires for the future. Before attempting to prepare a prescription, each team member should be thoroughly familiar with the information given in the preprescription form. Unless the therapist is familiar with the case, it is desirable to check any existing physical limitations.

The prescription is prepared through the cooperative effort of the team and is signed by the physician. Fitting is then carried out by the prosthetist in accordance with the prescription. A prescription form for upper-extremity amputees is shown in Figure 3.

#### VISIT NO. 2

Upon completion of the prosthesis, but before training, the amputee is brought before the clinic team a second time. Here emphasis is placed on "before training." Taken literally, this may mean that the amputee will have no conception of even the simpler control movements. In the final stages of fitting the upper-extremity amputee, however, it is necessary that the prosthetist instruct the amputee in basic control motions in order to ensure that the prosthesis is capable of function as fitted. Accordingly, the prosthetist must be thoroughly familiar with initial training procedures lest unnatural motions have to be unlearned.

The primary purpose of the second clinic visit is to ensure that the amputee is ready for training. Included is an evaluation of his physical and mental condition as well as of the degree of comfort and function provided by the prosthesis. A simple but comprehensive series of tests has been developed to aid in evaluating functional aspects in upper-extrem-

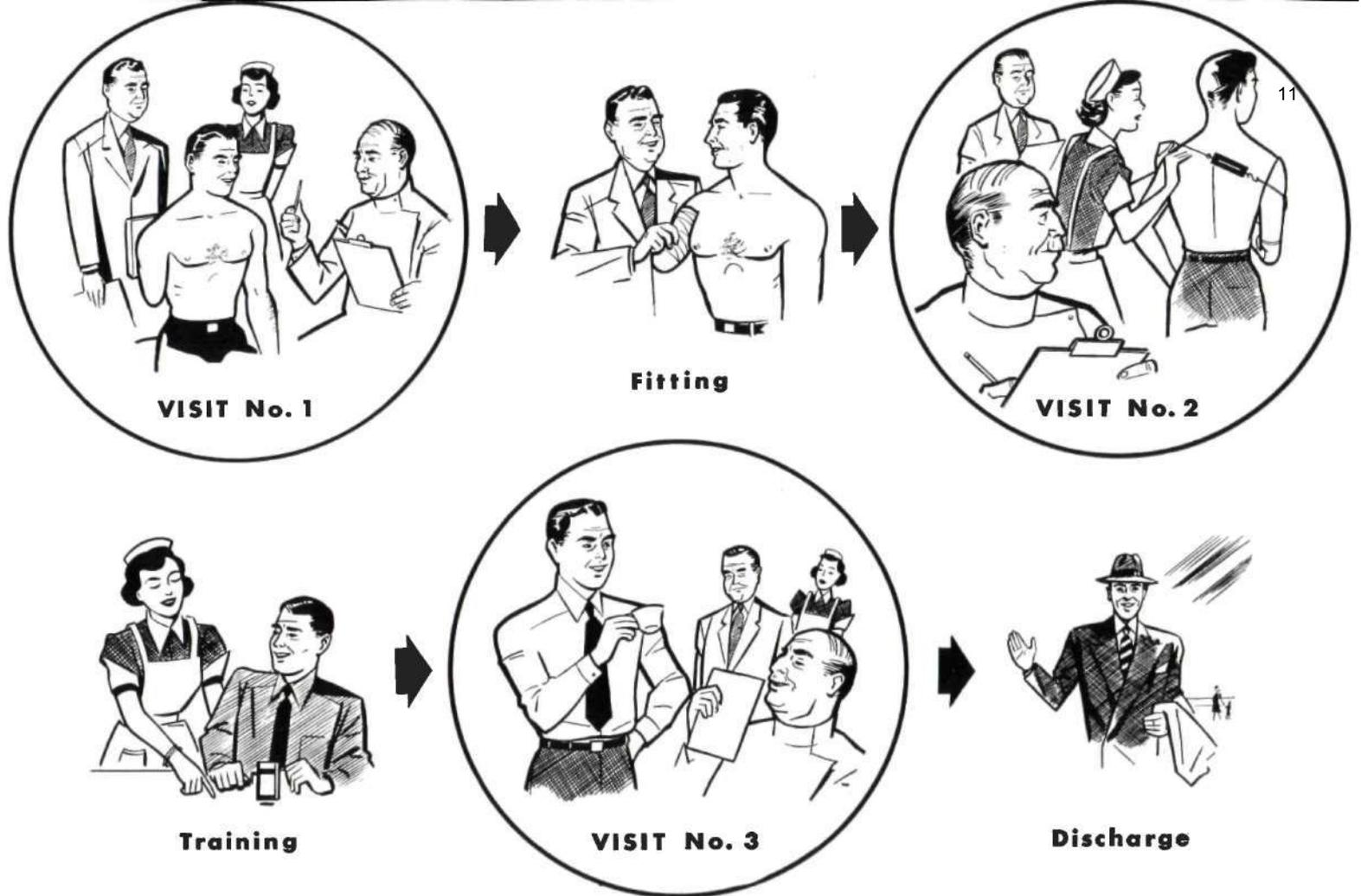


Fig. 1. Steps in the clinic—team procedure.

ity cases, and a description of these appears elsewhere in this issue (page 25).

When the team is satisfied that training is in order, the patient is referred to the therapist for this phase of the rehabilitation procedure. Although a patient and his prosthesis may meet all the criteria of the checkout procedures during the clinic session, quite often use of the prosthesis or changes of the stump during training make modifications necessary. Hence, the more familiar the therapist is with the functional aspects of the various components of the prosthesis the more quickly can he call such deficiencies to the attention of the team. Not only is time saved, but factors which tend to discourage many amputees are elim-

inated. The over-all result is added confidence in the prosthetics team.

VISIT NO. 3

Upon completion of training, the amputee is once more brought before the clinic team for a final evaluation of his ability to resume an active role in society. The patient should be encouraged to request the services of the team whenever required and also to report for follow-up examinations at regular intervals. The length of time between visits depends, of course, upon the peculiarities of each case, but as a rule it is best that the patient be examined at least once a year.

UPPER-EXTREMITY PREPRESCRIPTION FORM

PART I

- 1. Name ..... Date .....
- 2. Home address ..... Business address .....
- 3. City ..... Phone contact .....
- 4. Age ..... Height ..... Weight .....
- 5. (Circle those which apply)      Male      Female      Single      Married
- 6. Amputee referred by .....
- 7. Education (in years) and field of specialization .....
- 8. Present occupation (title and description of duties) .....
- 9. Occupation prior to amputation .....
- 10. Future occupational plans .....
- 11. Hobbies or recreational interests .....
- 12. What does the amputee think of his present prosthesis and its parts (function, appearance, desired improvements, etc.)? .....
- 13. In each of the following areas, list activities in which the prosthesis is used. If prosthesis is not generally worn, list activities in which the stump is used.
  - a) Dressing .....
  - b) Eating .....
  - c) Working .....
  - d) Recreation .....
- 14. How often does the amputee wear his prosthesis?
  - a) Hook worn ..... hrs. a day and ..... days a week.
  - b) Hand worn ..... hrs. a day and ..... days a week.
- 15. What benefits does the amputee think would result from wearing an improved (or securing a first) prosthesis? .....
- 16. Does the amputee have decided preferences or dislikes for particular prosthetic components? If yes, please explain.....
- 17. Before amputation was the amputee right-handed ... left-handed ..... or ambidextrous.....?

## PART II

1. Date..... Date.....

2. Date and cause of amputation .....

3. Amputation: Right..... Left.....

4. Stump length: BE..... inches medial epicondyle to end; AE..... inches acromion to end; AE..... inches axilla to end.

5. Arm length on sound side..... inches medial epicondyle to ulnar styloid.  
..... inches acromion to lateral epicondyle.

6. Limitations of motion of shoulder girdle (elevation; depression; forward shrug; rearward shrug):.....

7. Indicate in degrees and by standard muscle-testing procedures the range of motion and strength of the stump in the following movements:

Pronation	(BE)	.....	Strength	.....
Supination	(BE)	.....	Strength	.....
Elbow flexion	(BE)	.....	Strength	.....
Stump flexion	(AE)	.....	Strength	.....
Stump extension	(AE)	.....	Strength	.....
Stump abduction	(AE)	.....	Strength	.....
Stump rotation	(AE)	.....	Strength	.....

8. Stump characteristics (check as many of the following as apply):

Screwdriver shape	(BE)	.....	Edematous	.....
Cylindrical	.....	Firm	.....	.....
Tapered	.....	Loose and flabby	.....	.....
Bulbous	.....	Probable shrinkage	.....	.....
Bony prominences	.....	Pain	.....	.....

9. Special considerations (medical conditions, etc.):.....

10. Describe prosthesis now worn:

- Terminal device(s).....
- Wrist (disconnect, flexor, rotator).....
- Forearm (material and construction).....
- Elbow (hinges, BE).....
- Upper-arm cuff (type and material, BE).....
- Elbow (type and control, AE).....
- Socket (material and construction, AE).....
- Harness and control system (description of harness and cable as well as materials used).....

11. Present arm made by..... Worn..... Years  
Previous arms worn..... Years

12. a) In what respects is the present prosthesis unsatisfactory? Explain.....  
b) In what respects is the present prosthesis satisfactory? Explain.....

13. In each of the categories listed below, the amputee's control of his prosthesis is: Good; Fair; Poor (Specify)

- At mouth.....
- At waist.....
- At floor.....
- Generally (have amputee handle a few objects).....

14. Rate on a 5-point scale (5, excellent; 1, poor) amputee's physical suitability for wearing a prosthesis (consider stump length, strength, range of motion, pain, sensitivity, etc.)

Rating..... Comments.....

Fig. 2. Typical preprescription information form for upper-extremity amputation.

