1. INTRODUCTION

- The continual growth and development of food provision services are dynamic because a food service unit is scientifically planned and operated to provide a successful and effective food provision service.
- When a food service unit is planned for a hospital or institution, it is important to consider the activities that will take place in the food service unit.
- The planning of institutional food service units must comply with the regulations of the Act on Machinery and Occupational Safety 1983 as amended (Act 6 of 1983).

2. PURPOSE AND FUNCTION OF A FOOD SERVICE

2.1 Provision of Food to Clients

- Tasty attractive and nutritious meals are served to clients from a food service unit.
- The meals are prepared and served under strict hygienic standards, within a specific food budget.

2.2 Clinical Dietetic Service to Patients/Clients

- The clinical dietetic service can include the adaptation of the normal diet in terms of the preparation method, textures, composition, type of nutrients and quantity food consumed.

2.3 Management of a Food Service Unit

- The effective management of a food service unit includes amongst others the planning of meals, placing orders for purchases, receipt and storage of supplies as well as the production of meals. Specific preparation methods are used for food production.
- The serving of meals can take place with different serving systems suitable for a specified institution.
- Effective personnel management is applied to ensure a high productivity.
- Effective management must be applied by using available sources to ensure development of a high morale amongst food service personnel and clients *(patients and personnel).* Sufficient office space is essential where career planning and personnel evaluation can amongst others take place.
- The effective handling and maintenance of equipment and kitchen utensils plays an important role to reach the objectives of food provision services.
- The entrance to the food service unit must be effectively controlled. Doors to the entrance must be locked continually and provided with an entrance control mechanism like a bell/intercom system.

2.4 In-service training of Food Service Personnel

- Training facilities are required for food service personnel in a food service unit. The facilities can form part of the office accommodation for food service personnel.

3. NEEDS ASSESSMENT FOR THE PLANNING OF AN INSTITUTIONAL FOOD SERVICE UNIT AND DINING HALL

3.1 Compiling a needs List

- The need may develop to plan a new food service unit at a new hospital/institution, or at an existing hospital/institution, or to plan alterations at an existing food service unit.
- Sufficient insight is needed to ensure that both immediate and future requirements are catered for by keeping in mind possible future extensions or changes. The needs list is a summary of all planning needs and serve as a guideline for planning. It also serves as a reference guide for estimating costs.

3.2 Factors Influencing the Needs Assessment

3.2.1 Type of clients

- It must be exactly determined who will be fed from the food service unit of the hospital/institution concerned. The type of client can differ for each situation. Clients may include the following:
  - o Patients
  - o Resident Personnel
  - o Non-Resident Personnel (Professional and Non-Professional Personnel)
  - o Toddlers, infants and children in a crèche and nursery school; and

3.2.2 Number of clients

- The number of patients *(in- as well as out-patients)* and the number of personnel attached to the hospital or institution must be known. An estimated record of service is required for planning purposes. The policy for housing *(board and lodging)* must be known and applied.

Table 1: Table of analysis *(when patients number are known)*

TYPE OF CLIENT	NUMBER OF DRINKS AND MEALS/24 HOURS							
	T1	**B**	**T2**	**L**	**T3**	**S**	**T4**	**M**

Summary:.....Meals in total/day

.....Beverages in total/day

T1 - ***Early morning beverages***
B - ***Breakfast***
T2 - ***Morning Beverages***
L - ***Lunch***
T3 - ***Afternoon Beverages***
S - ***Supper***
T4 - ***Late night beverages***
M - ***Midnight meal***

3.2.3 Type of Menu

The composition of menus are influenced by:

- The nutrition policy such as the ration scale and directives
- The type of clients and their eating preferences
- The type of menu such as a choice -, cycle- or no choice cycle menu

3.3 Type of Food Preparation and Food Service Systems

- The choice of a specific type of food system for a specific hospital/institution can currently be made from the following systems:
- Conventional food system
- Cook-Freeze food system
- Cook-chill food system

3.3.1 Conventional Food System

3.3.1.1 Description of a conventional food system

- The conventional food system is a system with a continuous preparation period and a serving period.
- Food is prepared according to standardised recipes and according to conventional or automated preparation methods. Food is freshly prepared for each meal and is directly portioned dished up, garnished and served after the cooking process/preparation process which can also take place in batches.
- The dishing-up and garnishing of complete meals in suitable crockery, can take place individually and transported on trays in suitable trolleys to the different service points for serving to the patient/client.
- An alternative method is that food is portioned and garnished in mass portions in stainless steel food containers with lids and transported to the service points in suitable food trolleys where it is dished-up for serving to the patient/client.
- The serving temperature of warm and cold food must be 70°C-80°C and 7°C-10°C respectively.
- With the pre-dished tray food service system the trays with used crockery are placed back in the food trolley and transported back to the food service unit where it is centrally washed-up. Cups, saucers, bread plates and cutlery are washed and stored at the service points.
- When food is served from food trolley containers at the service points, the following cleaning and washing procedure can be applied:
- The washing-up procedure can be decentralised or partially decentralised:

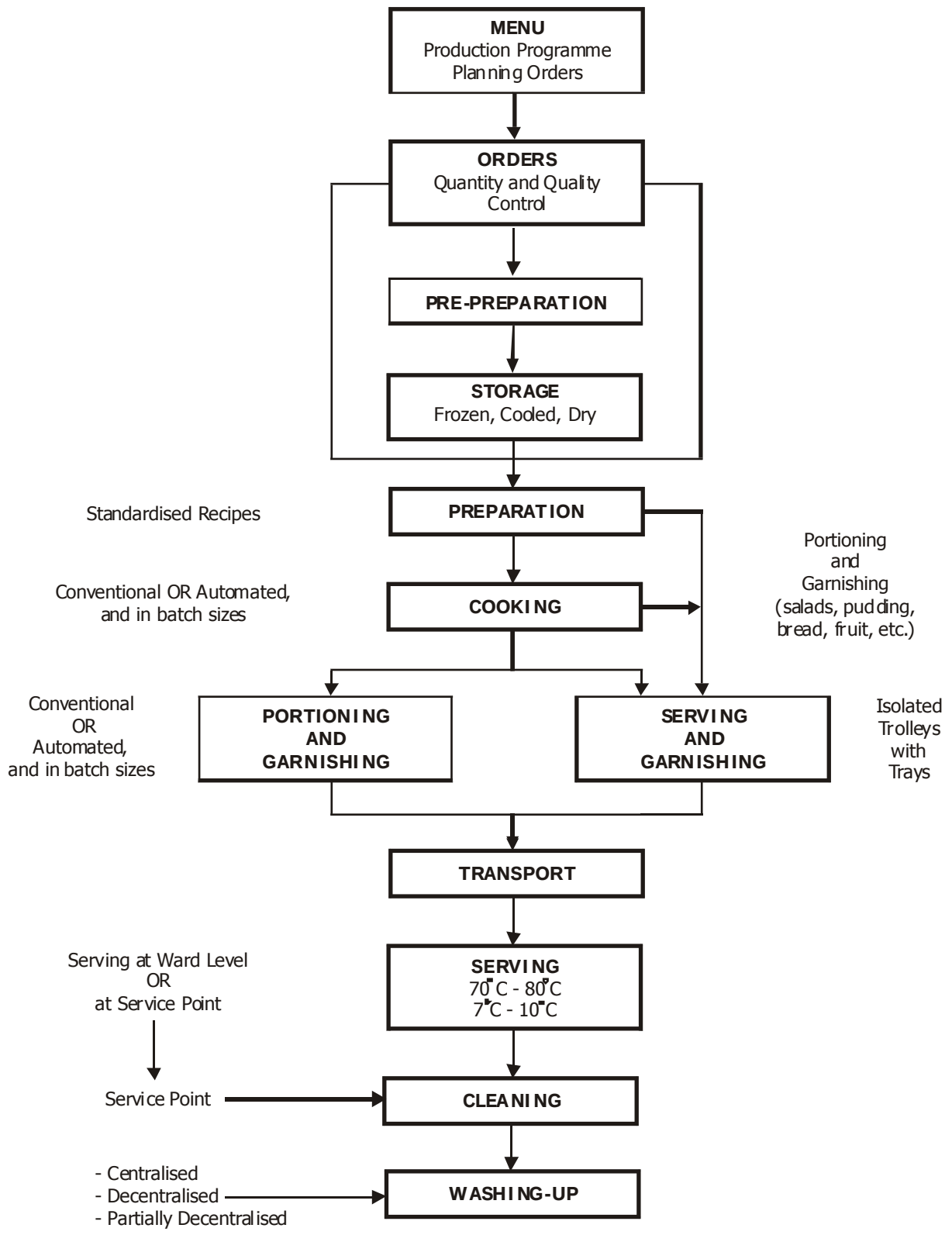
(i) Decentralised procedure

The cleaning and washing-up of the food trolley and food trolley containers and all crockery takes place at the service points. The clean crockery are stored at the service points. The clean trolley with containers are taken back to the food service unit.

(ii) Partially decentralised procedure

Some crockery such as cups, saucers, bread plates and cutlery are washed and stored at the service points. The other used crockery are transported in the food service unit where it is cleaned and washed up as well as the food trolley with food trolley containers.

Fig. 1 FLOW DIAGRAM FOR A CONVENTIONAL FOOD SYSTEM



3.3.2 Cook-Freeze Food System

3.3.2.1 Description of a Cook-Freeze food system

- The cook-freeze food system is a system in which the preparation period is separated from the serving period by a freezing process and frozen storage.
- Food preparation takes place according to standardised recipes with adaptations where necessary to prevent the detrimental effect of freezing on some foods such as the stabilisation of starch products.
- Food preparation takes place according to conventional or automated preparation methods. Some food is cooked only 50-75% after which it is frozen to -60°C with a freezing medium such as nitrogen within 60 minutes, frozen to 0°C to-10°C within 10-12 minutes and stored at -20°C to -30°C for 6-12 months. The food preparation and freezing can be geographically separated from the service point or client.
- Portioning can take place in single portions, as complete meals or in mass portions of a suitable size in different packaging materials. Laminated carton, aluminium or plastic containers can be used.
- Reconstitution of frozen food takes place at the service points in convection ovens. The food is reconstituted from the frozen state (-4°C to -7°C or from a temperature of 3°C to 4°C (mass portions) to a temperature of 70°C to 80°C. Food in single-portion containers take 20-25 minutes to heat. Food in mass portions, (8/10/20 portions per container) takes 30-35 minutes to heat, provided that the initial temperature is 3°C to 4°C and depending on the type of portion and quantity portions per container.

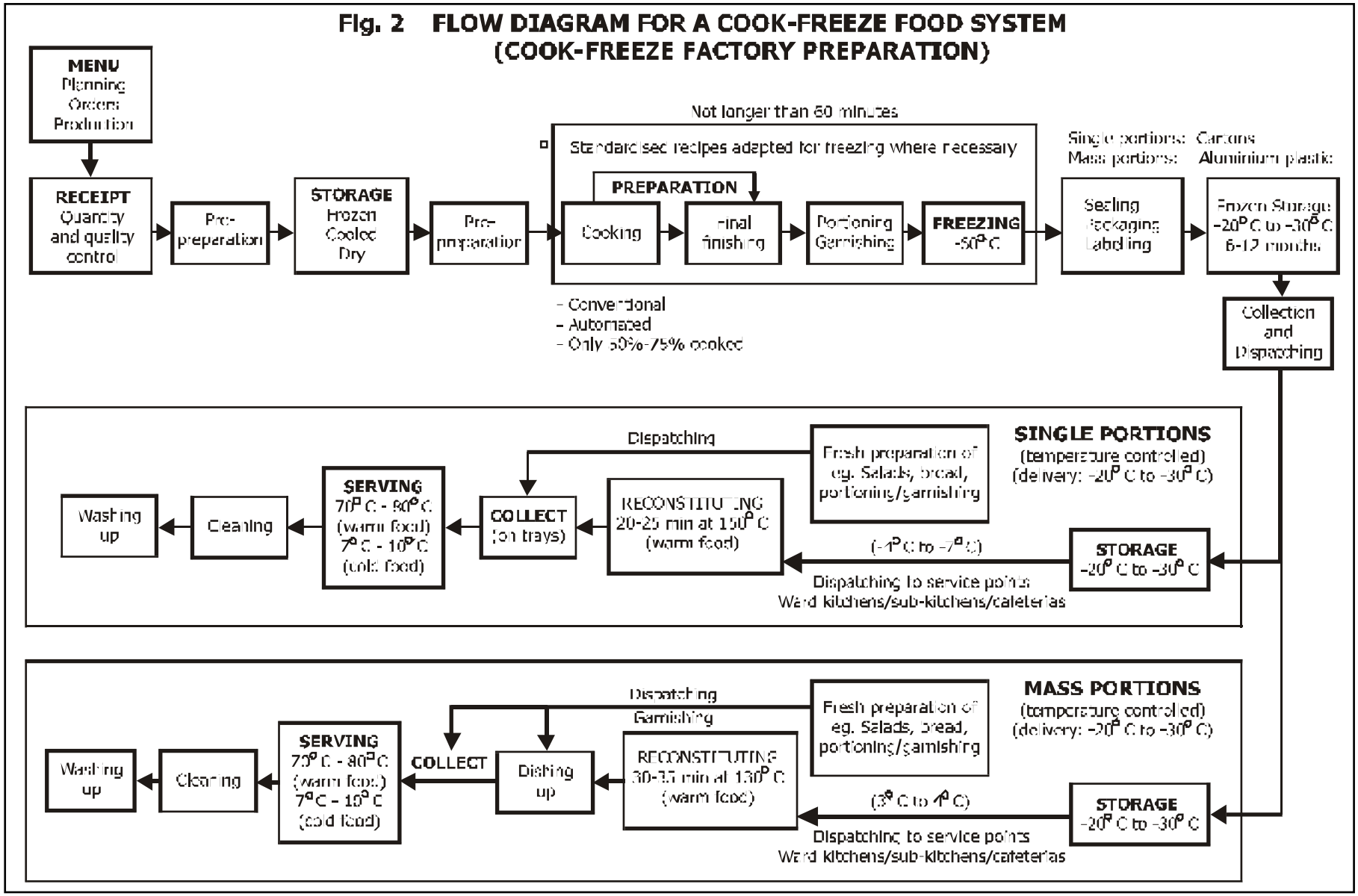
(i) Single portion package

After reconstitution, food in single portions, disposable containers are assembled on suitable trays and served to the patient/client. Cleaning and washing-up of trays and cutlery take place at the service point.

(ii) Mass portion package

After reconstitution, food in mass portion, disposable containers are dished-up and garnished in individual portions in suitable crockery and assembled on trays. It is transported in suitable trolleys to the service points for direct serving to the patient/client. Cleaning and washing-up of crockery takes place partially centralised as described for the conventional food system. Mass portions in the frozen state are dispatched as such to the service points and after reconstitution, it is dished-up, garnished and served in suitable crockery. Crockery is cleaned and washed-up decentralised as described for the conventional food system.

Fig. 2 FLOW DIAGRAM FOR A COOK-FREEZE FOOD SYSTEM (COOK-FREEZE FACTORY PREPARATION)



3.3.3 Cook-Chill Food Service System

3.3.3.1 Description of a cook-chill food system

- The cook-chill food system is a system where the preparation period is separated from the serving period by a temporary cooling process and cooled storage.
- Food is prepared by conventional or automated preparation methods, using standardised recipes. Food is only 80% cooked, after which it is cooled to 3°C to 4°C within 45 minutes in a cooling tunnel or cooling room. The food can be kept at 3°C to 4°C for 4 days.
- Complete meals can be portioned or cooled in suitable crockery in which it is served.
- Food can also be portioned and cooled in mass portions in stainless steel pans. It is heated to a temperature of 70°C to 80°C in infrared- or convection ovens at the service point.
- A complete meal heats in an infrared oven at 170°C to 180°C within 8-12 minutes and mass portions within 20-25 minutes, ready to be served. A complete meal heats in a convection oven at 170°C to 180°C within 12-15 minutes and mass portions within 30-35 minutes, ready to be served.
- Complete meals cooled in suitable crockery, can be heated in the food service unit and transported on trays in trolleys to the service points for serving to patients/clients.
- Alternatively, it can be transported in the cooled state on trays in trolleys to the service points for serving to patients/clients.
- In both procedures cleaning and washing-up takes place partially decentralised as described in the conventional food system.
- Food cooled in mass portions, can be dished-up in the food service unit in suitable crockery, assembled on trays and transported in trolleys to the service points, where it is heated and served to patients/clients. The cleaning and washing-up takes place partially decentralised as described in the conventional food system.
- Food can alternatively be heated in mass portions at the service points (such as a cafeteria system), dished-up and served. The cleaning and washing-up takes place decentralised or partially decentralised as described in the conventional food system.

Fig. 3 FLOW DIAGRAM FOR A COOK-CHILL FOOD SYSTEM