

Evaluation, Recommendation and Implementation of the Local Hospital Catering System



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According to the literature the prevalence of the risk of malnutrition in hospitalized people exceeds 25% of patients, this evidence is also related to low meal satisfaction.

To reduce hospital malnutrition it is also important to improve, at least in part, the consumption of meals by implementing the area of organoleptic and nutritional quality (O&NQ), in hospital catering services (HCS), as recommended in the draft Guide Lines drawn up in 2019 by the Ministry of Health.

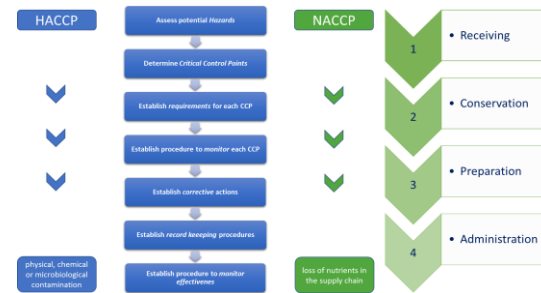
A consequence of taking such action is the ability to improve the performance levels of nutrition services and the continuum of care among hospitals and local health services, and to apply at the local level of the United Nations framework of SDGs, in particular of goals number 3. 'Well-being for all at all ages', and number 12. 'Responsible consumption and production'.

The Local Health Agency of Trieste (ASUITS) has conducted surveys to find out how to evaluate and improve the procurement qualifications of hospital catering systems and how to implement the area of O&NQ.

The production processes of meals served in two clinics using Cook/Fresh - Hot Hold (CFHH), and Cook Chill (CC) production process, with 130 and 560 patients respectively, were evaluated from 2017 - 2019.

As recommended by the Ministry of Health in the State – Regions Agreement, 'Assessment of national criticalities in nutrition and intervention strategies 2016 – 2019', the Nutrient Analysis Critical Control Point (NACCP) process was applied for the evaluation of the two hospital catering systems O&NQ's area.

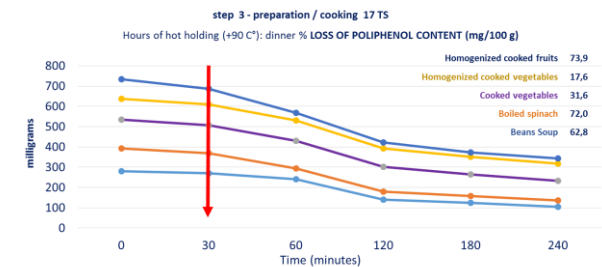
The purpose of the NACCP process is the maintenance of high nutritional levels with a consequent positive impact on consumer's (patients) health. It is based on the adherence of Good Nutritional Practices at every single step of the food production system.



During the first phase, using a specific checklist, the four steps of meal production processes of the two HCS, were evaluated. (The four steps are: 1. receiving, 2. conservation, 3. preparation – cooking, and 4. distribution).

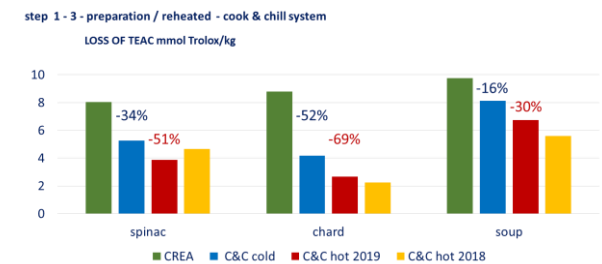
During the second phase, 120 meal samples were taken from the two HCS to be analyzed. The University of Trieste – the Department of Economics - Laboratory of Merceology performed the bromatological analysis, determining, in particular, the total antioxidant power (ARP) as total antioxidant activity of vitamins and polyphenols, the lipid and protein degradation compounds (LPD) and some vitamin compounds (V) present in the meals of the two HCS. A subsequent investigation (2019) was conducted to compare ARP, LPD, V content of meals of two CC methods and satisfaction of consumer. Meals produced using respectively CC Cold Plating Retherm (PR) and CC Hot PR were served to patients of two different wards of an hospital (n= 30,30).

Meals produced by the CFHH system process detected in step 3. preparation - cooking (hot holding) demonstrated the average constant of ARP, LPD content in almost all samples in the space of one hour. In contrast, between the first and the second hour the greatest amount of decay occurs, which then remains established after the second hour. After 6 hours 70% of ARP is lost.



Meals produced by the CC production process highlight the average loss of 50% of ARP, and Vitamin A compared to the CFHH.

Meals produced by the CC Cold PR method limit the loss of ARP by 15-40% less compared to the CC Hot PR method.



The satisfaction of patients who have consumed meals produced by the CC Cold PR method is double compared to that of patients who have consumed meals produced by the CC Hot PR method.

These surveys have produced significant evidence in evaluating hospital meal production processes and systems, have identified the potential of improving the area of organoleptic and nutritional quality, and the opportunity to guarantee a healthier and more protective diet for patients.

The results were applied to include new criteria in tender specifications also capable of protecting nutritional variables.

The evaluation of the area of organoleptic and nutritional quality of hospital catering services by the NACCP process represents a powerful tool to act on determinants of food safety and nutrition security. NACCP should be applied to all types of catering services procurements procedure also in order to improve the areas of: customer satisfaction, training, impact on the ecosystem, and production process.

Consequently the results of the surveys are relevant also to apply the United Nation framework of SDGs in agenda 2030, linked at local level to a variety of goals: number 3. 'Ensure healthy lives and promote well-being for all at all ages', number 8. 'Promoting health employment as a driver for inclusive economic growth', number 11. 'Sustainable cities and communities', number 12. 'Responsible consumption and production', number 13. 'Climate action', number 14. 'Sustainable use of oceans and marine resources', and number 15. 'Sustainable use of terrestrial ecosystems'.