

# The "protected discharge" project at Campoligure rehabilitation nursing home: telemedicine as an implementation strategy to prevent the risk of malnutrition in elderlies

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## Background and aims

Malnutrition is widespread among elderly patients residing in rehabilitation nursing homes (RNH). This negatively affects quality and life expectancy, even after discharge. Technological innovation can help to combat the risk of malnutrition. Therefore, we aim to offer a nutritional protocol to RNH, which includes a telemedicine service after discharge, to prevent malnutrition and better monitor nutritional status at home.

## Methods

At Campoligure RNH, Genoa, we developed the nutritional protocol, "protected discharge", structured as follow:

0) During the stay: goals definition based on anthropometric values (weight, BMI) and data collected during the stay with the aid of validated tools (Mini Nutritional Assessment test, food history), appropriateness check of nutrition plan (e.g. enteral nutrition) and training of staff and patient/caregiver for telemedicine service.

1) The RNH specialist doctor and the RNH dietitian conduct a televisit with patient and its caregiver, to explain the care pathway and telemedicine modalities (e.g. instructions for use of devices).

2) At 30, 60 and 90 days: televisits with dietitian to check nutritional values against those measured during the stay.

## Results and conclusion

If telemedicine is applied correctly, the project could allow nutritional monitoring in the patient's family context, which would improve his/her quality of life and that of the caregiver. The risk of malnutrition, costs, length of stay and admission to the E.R. could potentially be reduced. However, we expect that difficulties, e.g. in the use of devices or intermediation with the caregiver, may emerge from the remote mode, resulting sometimes in less reliable assistance.

### Mini Nutritional Assessment MNA®



Last name:		First name:	
Sex:	Age:	Weight, kg:	Height, cm:
		Date:	

Complete the screen by filling in the boxes with the appropriate numbers. Add the numbers for the screen. If score is 11 or less, continue with the assessment to gain a Malnutrition Indicator Score.

Screening	Assessment
<p><b>A Has food intake declined over the past 3 months due to loss of appetite, digestive problems, chewing or swallowing difficulties?</b></p> <p>0 = severe decrease in food intake 1 = moderate decrease in food intake 2 = no decrease in food intake <input type="checkbox"/></p> <p><b>B Weight loss during the last 3 months</b></p> <p>0 = weight loss greater than 3kg (6.6lbs) 1 = does not know 2 = weight loss between 1 and 3kg (2.2 and 6.6 lbs) 3 = no weight loss <input type="checkbox"/></p> <p><b>C Mobility</b></p> <p>0 = bed or chair bound 1 = able to get out of bed / chair but does not go out 2 = goes out <input type="checkbox"/></p> <p><b>D Has suffered psychological stress or acute disease in the past 3 months?</b></p> <p>0 = yes 2 = no <input type="checkbox"/></p> <p><b>E Neuropsychological problems</b></p> <p>0 = severe dementia or depression 1 = mild dementia 2 = no psychological problems <input type="checkbox"/></p> <p><b>F Body Mass Index (BMI) (weight in kg) / (height in m<sup>2</sup>)</b></p> <p>0 = BMI less than 19 1 = BMI 19 to less than 21 2 = BMI 21 to less than 23 3 = BMI 23 or greater <input type="checkbox"/></p> <p><b>Screening score (subtotal max. 14 points)</b></p> <p>12-14 points: Normal nutritional status 8-11 points: At risk of malnutrition 0-7 points: Malnourished</p> <p>For a more in-depth assessment, continue with questions G-R</p>	<p><b>G Lives independently (not in nursing home or hospital)</b></p> <p>1 = yes 0 = no <input type="checkbox"/></p> <p><b>H Takes more than 3 prescription drugs per day</b></p> <p>0 = yes 1 = no <input type="checkbox"/></p> <p><b>I Pressure sores or skin ulcers</b></p> <p>0 = yes 1 = no <input type="checkbox"/></p> <p><b>J How many full meals does the patient eat daily?</b></p> <p>0 = 1 meal 1 = 2 meals 2 = 3 meals <input type="checkbox"/></p> <p><b>K Selected consumption markers for protein intake</b></p> <p>• At least one serving of dairy products (milk, cheese, yoghurt) per day yes <input type="checkbox"/> no <input type="checkbox"/></p> <p>• Two or more servings of legumes or eggs per week yes <input type="checkbox"/> no <input type="checkbox"/></p> <p>• Meat, fish or poultry every day yes <input type="checkbox"/> no <input type="checkbox"/></p> <p>0.0 = if 0 or 1 yes 0.5 = if 2 yes 1.0 = if 3 yes <input type="checkbox"/></p> <p><b>L Consumes two or more servings of fruit or vegetables per day?</b></p> <p>0 = no 1 = yes <input type="checkbox"/></p> <p><b>M How much fluid (water, juice, coffee, tea, milk...) is consumed per day?</b></p> <p>0.0 = less than 3 cups 0.5 = 3 to 5 cups 1.0 = more than 5 cups <input type="checkbox"/></p> <p><b>N Mode of feeding</b></p> <p>0 = unable to eat without assistance 1 = self-fed with some difficulty 2 = self-fed without any problem <input type="checkbox"/></p> <p><b>O Self view of nutritional status</b></p> <p>0 = views self as being malnourished 1 = is uncertain of nutritional state 2 = views self as having no nutritional problem <input type="checkbox"/></p> <p><b>P In comparison with other people of the same age, how does the patient consider his / her health status?</b></p> <p>0.0 = not as good 0.5 = does not know 1.0 = as good 2.0 = better <input type="checkbox"/></p> <p><b>Q Mid-arm circumference (MAC) in cm</b></p> <p>0.0 = MAC less than 21 0.5 = MAC 21 to 22 1.0 = MAC 22 or greater <input type="checkbox"/></p> <p><b>R Calf circumference (CC) in cm</b></p> <p>0 = CC less than 31 1 = CC 31 or greater <input type="checkbox"/></p> <p><b>Assessment (max. 16 points)</b> <input type="checkbox"/><input type="checkbox"/><input type="checkbox"/><input type="checkbox"/></p> <p><b>Screening score</b> <input type="checkbox"/><input type="checkbox"/><input type="checkbox"/><input type="checkbox"/></p> <p><b>Total Assessment (max. 30 points)</b> <input type="checkbox"/><input type="checkbox"/><input type="checkbox"/><input type="checkbox"/></p>

**References**

1. Vellas B, Villars H, Abellan G, et al. Overview of the MNA® - Its History and Challenges. *J Nutr Health Aging*. 2009; 13:456-465.

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3. Guigoz Y. The Mini-Nutritional Assessment (MNA®) Review of the Literature - What does it tell us? *J Nutr Health Aging*. 2006; 10:468-487.

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Malnutrition Indicator Score	
24 to 30 points	<input type="checkbox"/> Normal nutritional status
17 to 23.5 points	<input type="checkbox"/> At risk of malnutrition
Less than 17 points	<input type="checkbox"/> Malnourished

