Desing and development of a prescription module of enteral diets for a neonatal unit.

J.J. Martínez Garde[1], L.R. López Giménez[1], M. Valero Domínguez[1], C. Abraira Meriel[1], A. Gómez Esteban[1], M.A. Martín Vega[1], M.D. Rivas Santayana[1].

[1]Hospital Universitario Marqués de Valdecilla, Pharmacy, Santander, Spain.

 jjgardester@gmail.com

Background:

A safety problem occurred in requesting enteral diets (EDs) in neonatal unit.
We decided to develop a special prescription module for requesting EDs.

Objectives:

To describe the design and development of a prescription and request module for EDs in a neonatal unit.

Materials and methods:

1.- We reviewed EDs (milks, supplements and fortifiers).

2.- We described their composition:

- Kilocalories
- Macronutrients: g of protein, lipids and carbohidrates

- Micronutrients:
  - mEq of Na, K, Cl, Ca and Mg
  - mMol of P
  - mg of elemental iron
  - IU of vitamin D3
- Osmolarity (mOsm/L)

3.- We completed these information with the manufacturer.

4.- We decided to include in ED prescription module:

name of diet
frequency
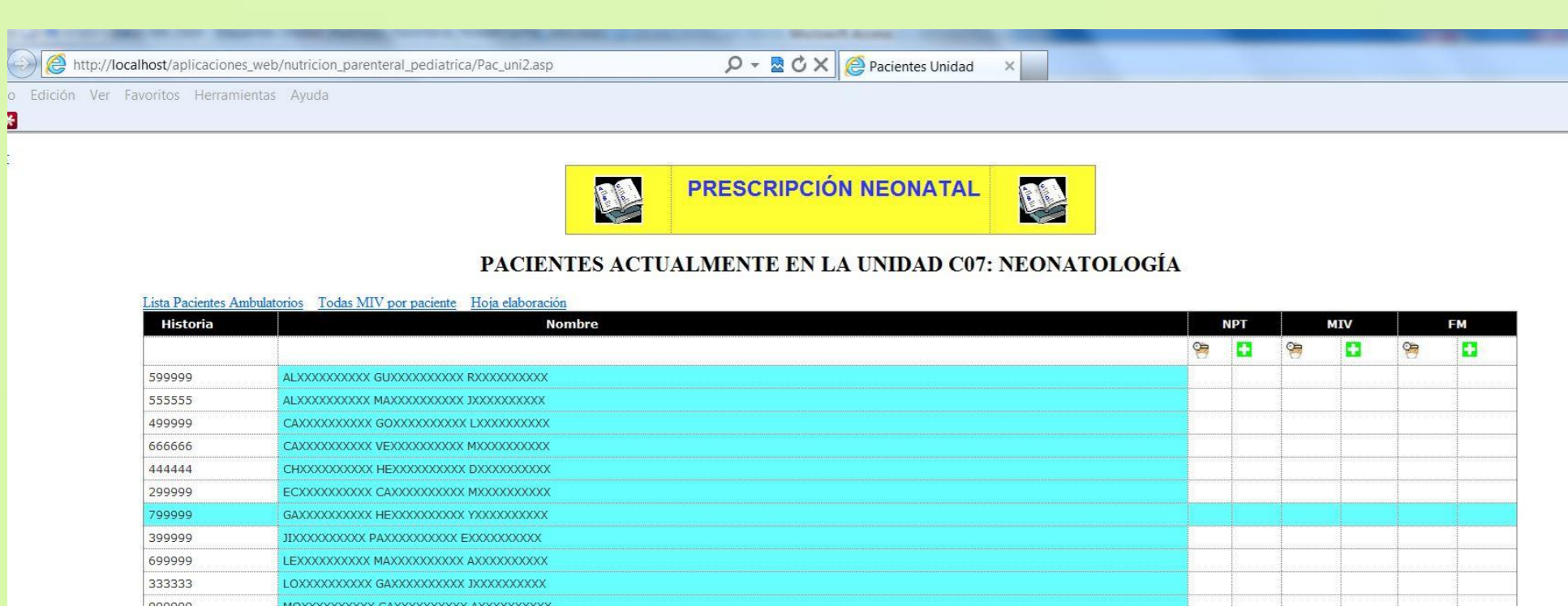administration route
type and unit of administration

Results:

The neonatal computer physician order entry (CPOE) now has another option, the ED module.
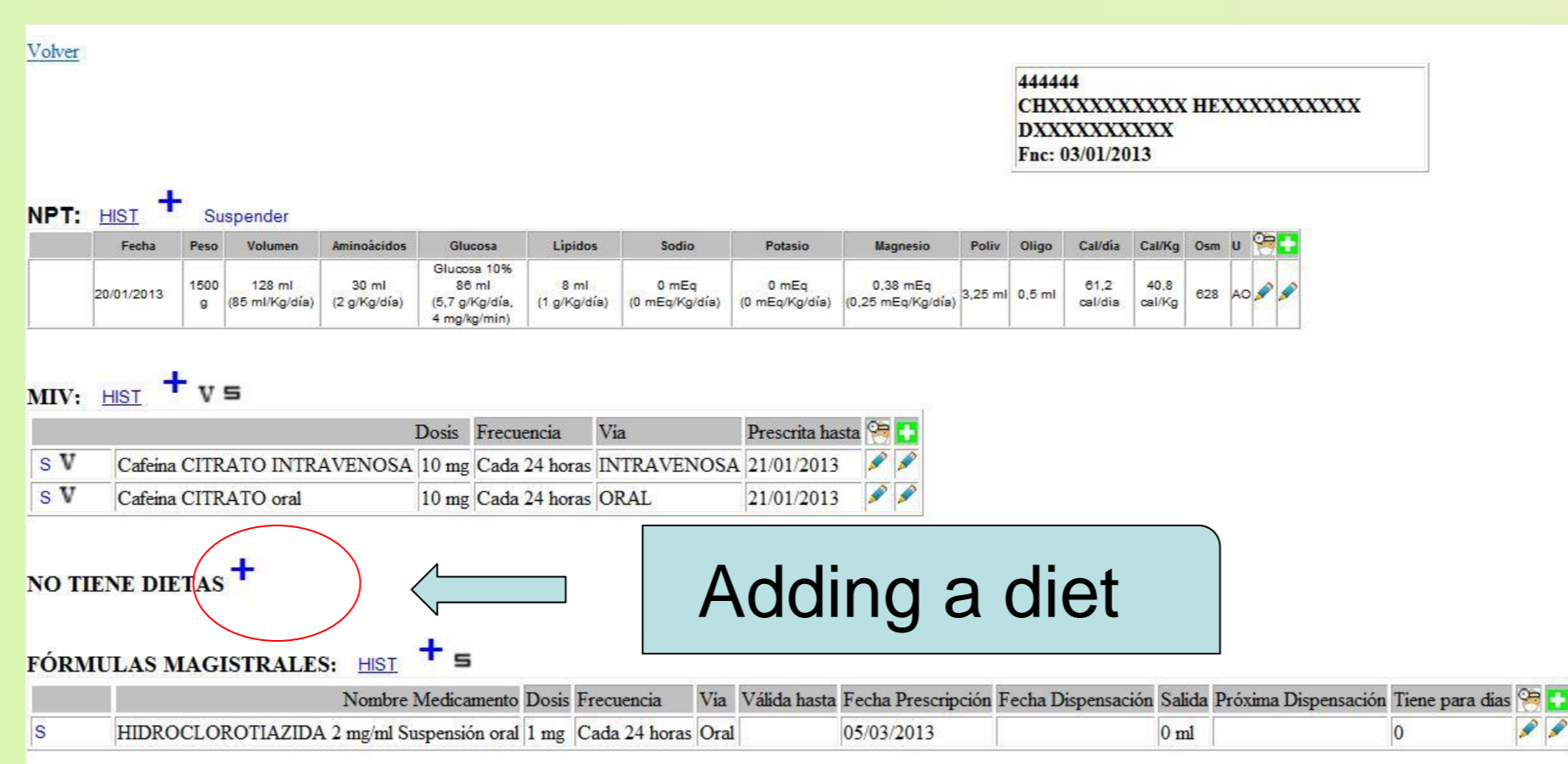
The prescriptions also include the weight of the patient. When the physicians select ED, they can view the qualitative and quantitative composition of the formula. The prescription module calculates macronutrients provided for that prescription (g/kg/day), micronutrients (mg/kg/day, mEq/kg/day or mMol/kg/day), total kilocalories (kcal/kg/day) and osmolarity (mOsm/L).

The prescribed diet is checked against nutritional requirements obtained from the European Society of Paediatric Gastroenterology and Nutrition guidelines.
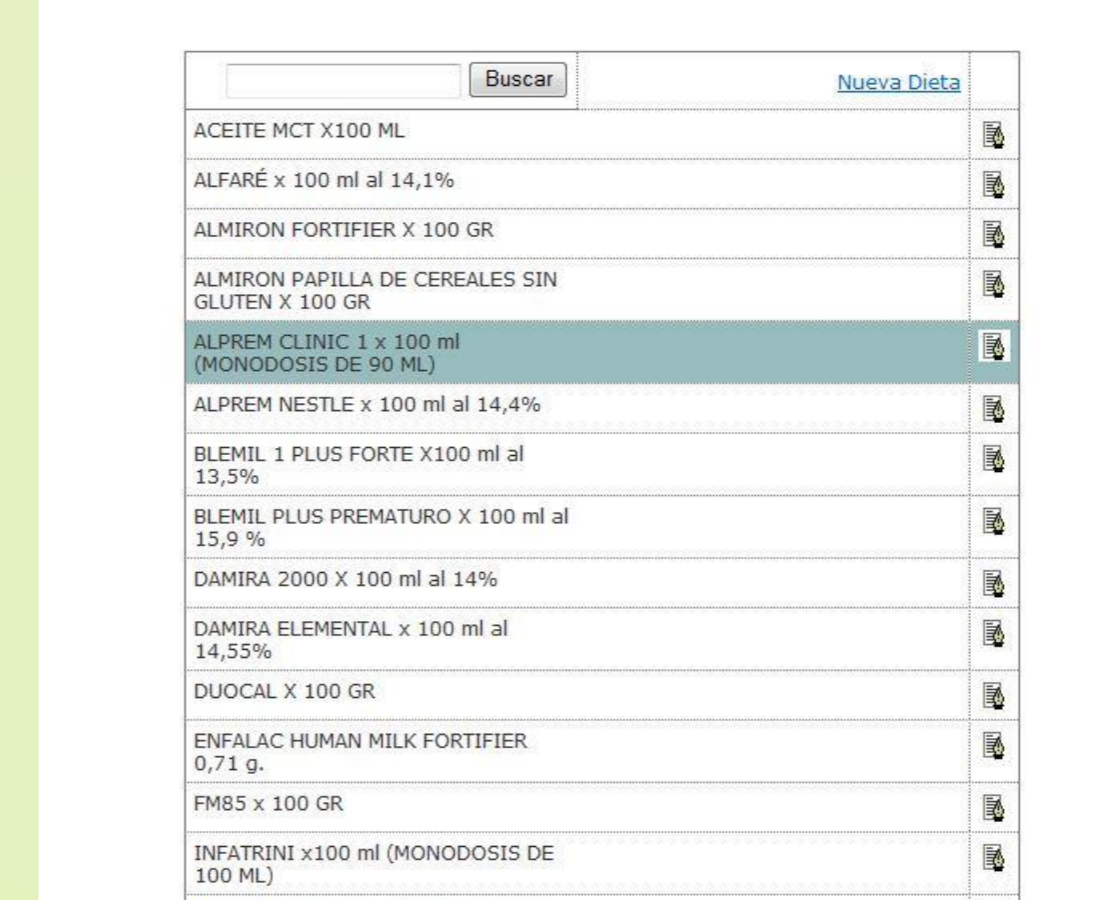
Finally, the software can generate the request for the diets without the necessity of handwritten requests.
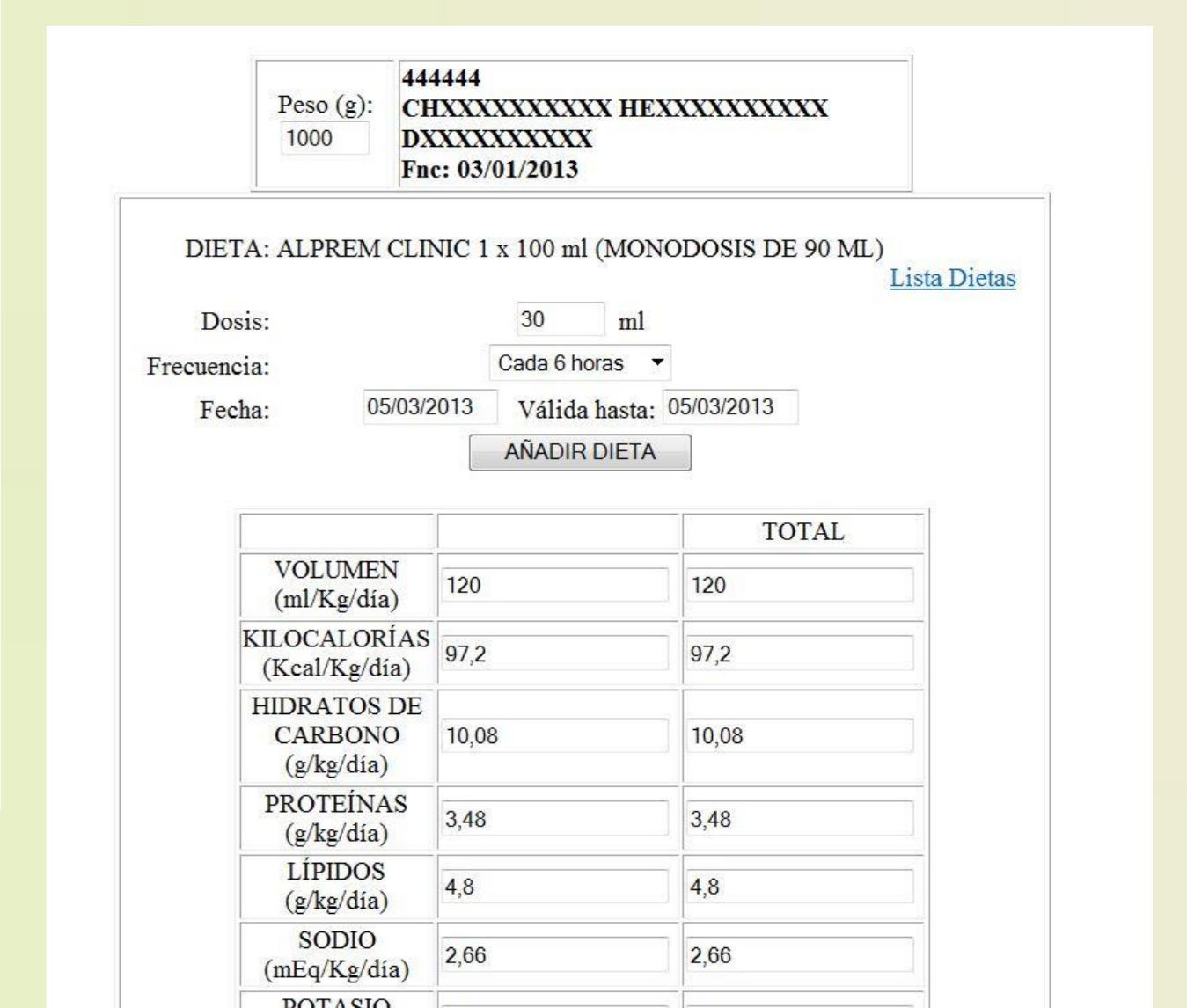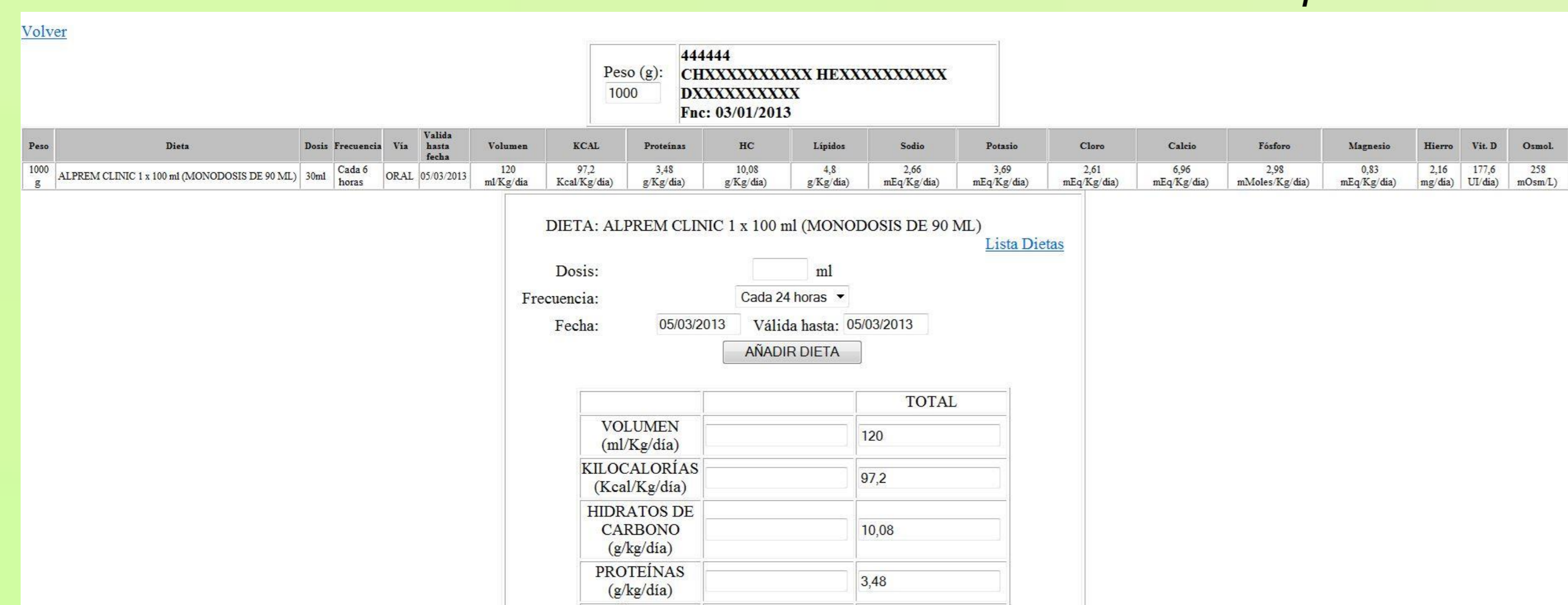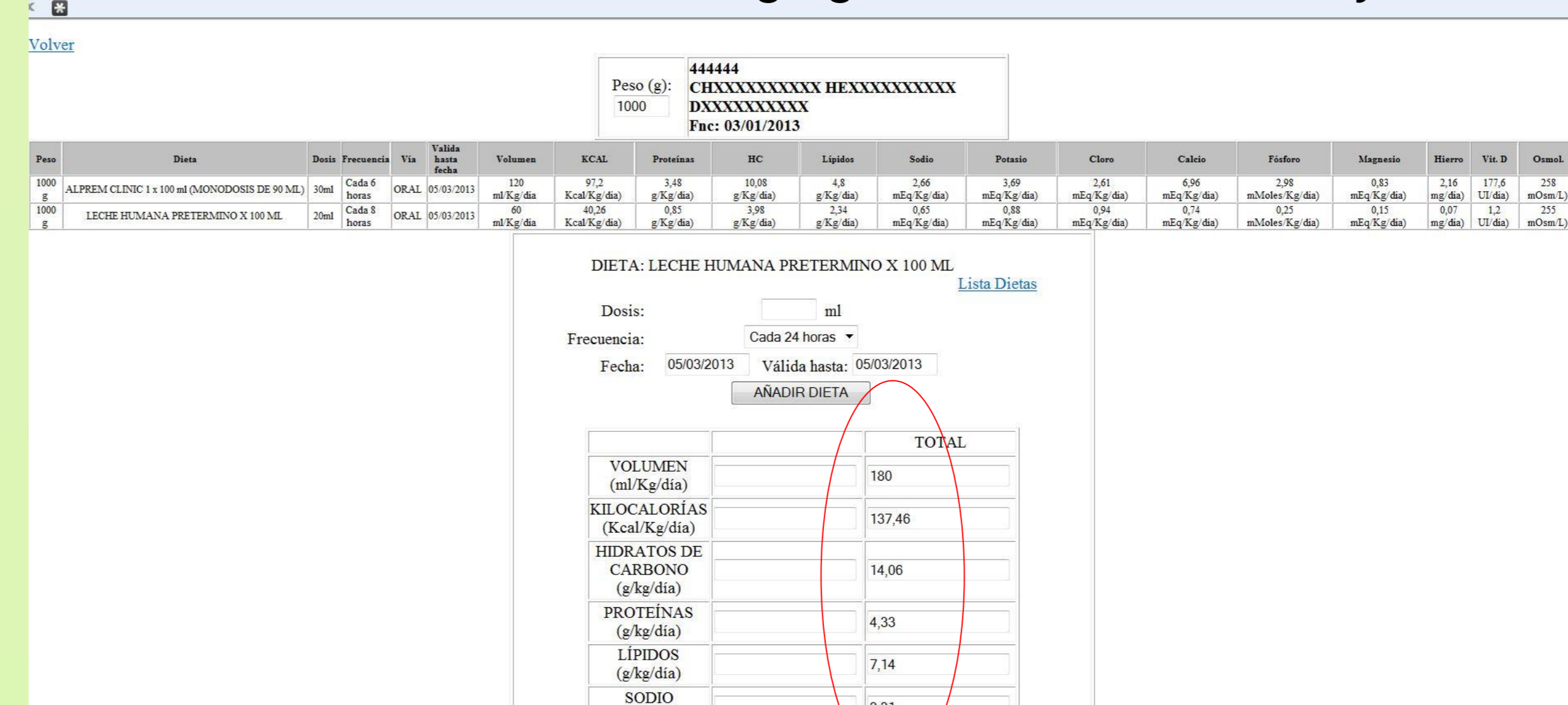

1. List of patients

2. Prescription modules

3. Choosing the diet

4. Changing diet, dose , frecuency and weight, values are changing

5. A prescribed diet

6. Another diet. Another diet. The values have been added to the previous

Discussion and Conclusion:

ED can cause medication errors, such as transcription problems, excessive or miscalculated macro and micronutrients or errors in route of administration. These errors may have clinical impact on children and can be more serious in preterm infants. The ED prescription module is an excellent tool to prevent errors and facilitate the nutritional calculations.