**Purpose** To report the introduction of a gravimetric process of weighing to encourage its future implementation and increase the quality and safety in the preparation of parenteral nutrition (PN).

**Materials and Methods** In order to standardise the gravimetric control of PN, a protocol was developed by the nutrition unit. The quality of the PN preparation was established by calculating the accuracy (the mean of the error in the gravimetric analyses (EGA)) and precision (square root of the mean square of the EGA) and the alert limits were set at ±5%.

The first step was to determine the densities of the components of the PN and update the parenteral nutrition programme. The PN labels were modified to show the theoretical weight of the PN and the minimum and maximum limits allowed.

**Results** One strategy established for the quality control of the final product was to compare the final weight of the product with the volume and the density calculated for each component.

In the first 67 days 150 parenteral nutrition mixtures were made in the neonatology department. The average theoretical weight was 323.68 g (±236.04) and the average measured weight was 323.45 g (±259.94).

The mean difference of the actual weight versus the theoretical weight was 2.8% (±0.04).

**Conclusions** Gravimetric analysis is a strategy to check the accuracy and precision in PN and complements the quality assurance processes normally used to regulate the preparation.

No conflict of interest.