

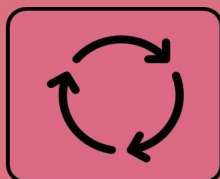
Supplemental File 1 – Medication preparation and administration via a nasogastric tube: Baseline (2014) and PDSA cycles performed in 2015 – 2017.

Baseline (2014)



- A cross-sectional study was conducted in the medical wards of three secondary-level Brazilian teaching hospitals: two in the interior of São Paulo and one in the interior of Minas Gerais.
- A total of 374 doses of medications were observed during preparation and administration via a nasogastric tube.
- Errors related to the preparation and administration of medications were identified in the three hospitals.
- A hospital in the interior of the state of São Paulo was elected for the quality improvement program.

PDSA cycles (2015 - 2017)



- A good practice guidance to support safe oral medication preparation and administration via a nasogastric tube was developed and implemented.
- Training of the nursing team on the techniques of preparation and administration of medications via a nasogastric tube was performed.
- A list containing the drugs that should not be crushed, including therapeutic alternatives, was made available to physicians and nurses at the hospital.
- The nursing team was observed during the preparation and administration of medications via a nasogastric tube, and the results of the observations were compared with those of the baseline (2014).
- It was found that the study hospital did not have adequate equipment to grind the hard tablets to a fine and homogeneous powder.
- We identified a 10.7% exacerbation in the outcome measure 'tube obstruction' and 87.6% in the process measure 'compressed crushed to a fine and homogeneous powder'.
- The study hospital acquired a porcelain mortar and pestle. However, the nursing team did not adapt to the new equipment.
- A participatory multi-criteria group decision-making process was carried out for the acquisition of new equipment to crush oral hard tablets. A team member suggested the new equipment (Easy Crush®) to crush the pills.