100.000 treatments prepared by robot what have we learned?

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BACKGROUND

In 2007, the University Hospital of Ancona started the journey in IV automation compounding. At the end of 2009, the clinical validation process and workflow reorganization ended, the second robot was introduced to set a fully automated iv. oncology pharmacy. The laboratory is composed of two APOTECACHEMO systems and a laminar airflow cabinet which work from 8am to 4pm. There are 3 technicians from 8am to 2pm and 1 technician from 10am to 4pm. We work in a just-in-time production (80% for outpatient and 20% inpatient) and the rush hours go from 9am to 1pm. Two systems are used until 2pm and one system works for entire day.

MATERIAL AND METHOD

The production data are analysed in terms of delivered doses and type of preparations, by means of the statistical tools of APOTECACHEMO.

RESULTS

Before 2010 the automatic production was 10400 medications and in 2010 increased to 16300 (80% of yearly production). In the following years, the production raised: it was 19300, 19600 and 20300 respectively in 2011, 2012 and 2013. In August 2014, we overcame the threshold of 100.000 medications compounded with APOTECACHEMO and a robotic production rate of 95%. The yearly production is composed of 85% bags, 10% syringes and 5% elastomeric pumps. 57 different active ingredients are used.

CONCLUSION

- Automation guarantees utmost quality standards because every step of the compounding process is controlled and traced.
- Automation can cover more than 90% of daily preparations also in a just-in-time production.
- Automation allows a more intelligent and efficient management of human resources: every 10000 preparations, one FTE technician can be elevated to whiger value-added tasks.
- To take advantage of automation, the workflow should be redesigned (i.e. introduce multi-dose vials and drug day).