

# COST SAVINGS POTENTIAL OF PHARMACY STAFF-BASED PREPARATION OF BIOLOGICALS COMPARED TO NURSE-BASED PREPARATION

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## Background

The increase in biological medicines prescribed for use in a Department of Rheumatology out-patient setting resulted in a need for the work of hospital pharmacists to be reorganised. In 2011, reconstitution and preparation were transferred from nursing to pharmacy staff following recommendations based on Breckenridge report.

## Purpose

To evaluate the cost savings of pharmacy staff-based preparation of monoclonal antibody drug infusions.

## Materials and methods

Tocilizumab was chosen as the reference drug, since its dosing is based on the patient's weight. Records of the medicines prepared, submitted to Health Insurance Institute of Slovenia, including the prescribed dose and the amount of the drug actually used were analysed.

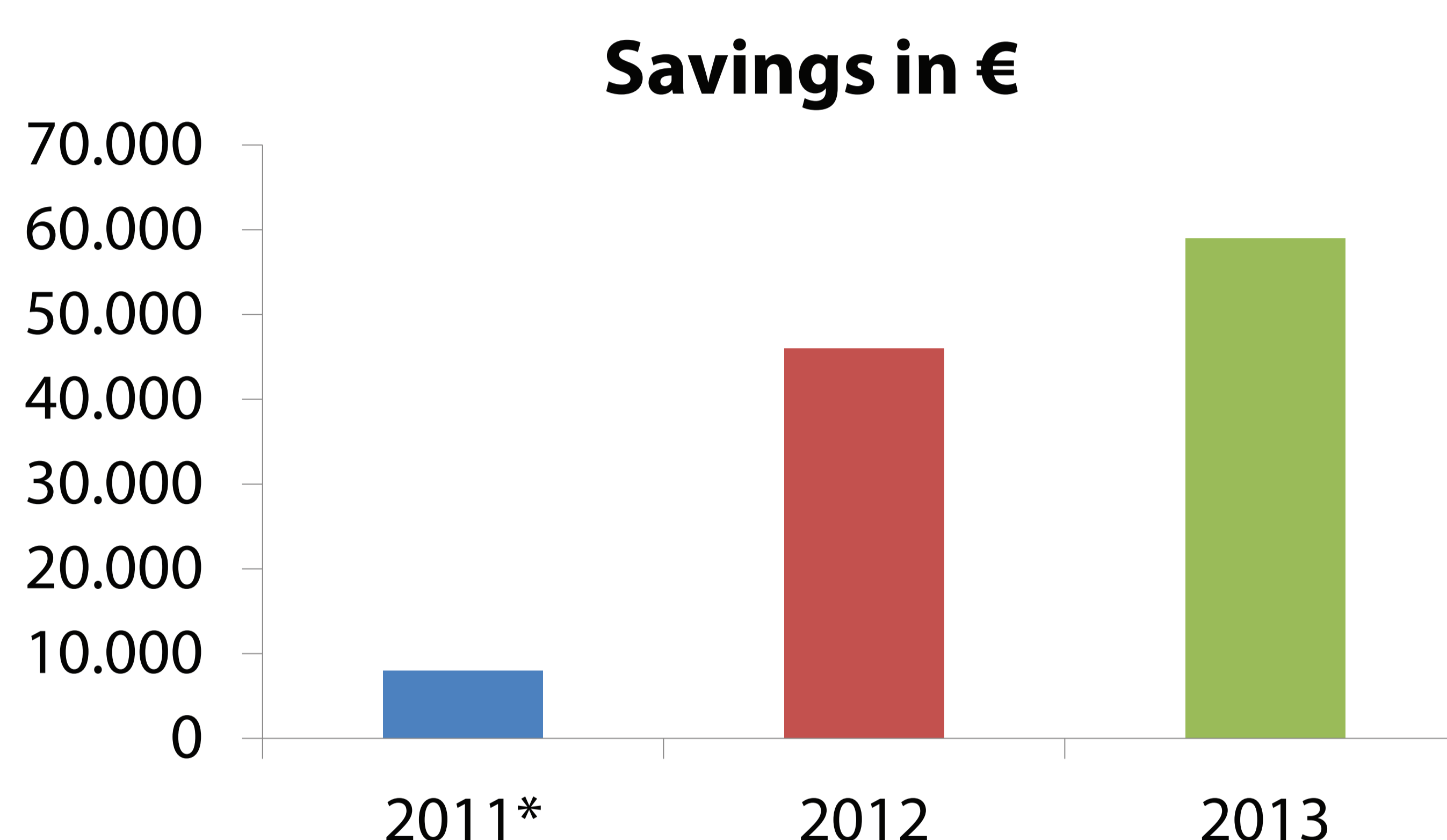
The periods from May to September 2011 for nurse-based preparation and from May to September 2013 for pharmacy staff-based preparation were observed, with the average dose per patient being  $540 \pm 133$  mg (N = 274) and  $537 \pm 125$  mg (N = 517), respectively.

The location of preparation remained on the ward within already existing facilities with no additional equipment costs required. The associated materials reaching <0.5 % of total preparation costs and pharmacy compounding time were excluded from the calculation as staff availability was achieved through internal reorganisation of work.

## Results

Using the volumetric method of preparation and the ability to use the whole volume of the vial, including overfill provided by the manufacturer, pharmacy staff-based preparation produced little to no discarded drug leftovers compared to nurse-based preparation using the manufacturer's graphic instructions.

These factors contributed to savings estimated at €95 per 1000 mg tocilizumab prescribed, or €51 per application.



**Figure 1**  
Annual savings for preparations with tocilizumab (\*includes only the period from October to December)

## Conclusions

The implementation of pharmacy staff-based preparation lowered the drug costs significantly and ensured final product quality while increasing patients' safety by including the pharmacists' overview and final check of the product solution.

Factors contributing to the cost reduction were

- complete use of the entire filling volume of drug solution from each vial,
- use of all remnants and
- use of large volume vials, which also simplified stock management.

The estimated annual savings were up to 59.000 €, with the sum reaching 113.000 € at the end of December 2013 (Figure 1).

