

# Five year evolution of drug prescribing in a university adult intensive care unit

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## Introduction

Drug prescription is difficult in intensive care units (ICU) as prescribers are many, drugs expensive and decisions complex.

In our ICU, Specialist Clinicians (SC) are entitled to prescribe a list of specific drugs, negotiated with Intensive Care Physicians (ICP).

## Aim

The objective of this investigation was to assess the five year evolution of quantity and costs of drug prescription in our adult ICU and identify the relative costs generated by ICP or SC.

## Setting

32-bed adult ICU caring for medical and surgical patients from a 900-bed university hospital

## Methods

Quantities and costs of drugs delivered on a quarterly basis to the adult ICU of our hospital between 2004 and 2008 were extracted from the pharmacy database, by ATC code, an international five level classification system.

Within each ATC first level, drugs with either

- high level of consumption,
  - high costs, or
  - large variations in quantities and costs
- were singled out and split by type of prescriber (Intensive Care Physician (ICP) or Specialist Clinician (SP)).

Costs figures used were drug purchase prices by the hospital pharmacy.

Values were not adjusted for inflation and increase in clinical activity over the study years.

## Results

- Over the five year period, both quantities and costs of drugs increased, following a non-steady, non-parallel pattern (figure 1).
- Four ATC codes accounted for 80% of both quantities and costs, with ATC code B (blood and blood forming organs) amounting to 63% in quantities and 41% in costs, followed by ATC code J (systemic anti-infective, 20% of the costs), ATC code N (nervous system, 11% of the costs) and ATC code C (cardiovascular system, 8% of the costs) (figure 2).
- Prescription by SC amounted to 1% in drug quantities, but 19% in drug costs.
- The rate of increase in quantities and costs was 7 times larger for ICP than for SC (figure 3).
- Some peak values in costs and quantities were related to a very limited number of patients.

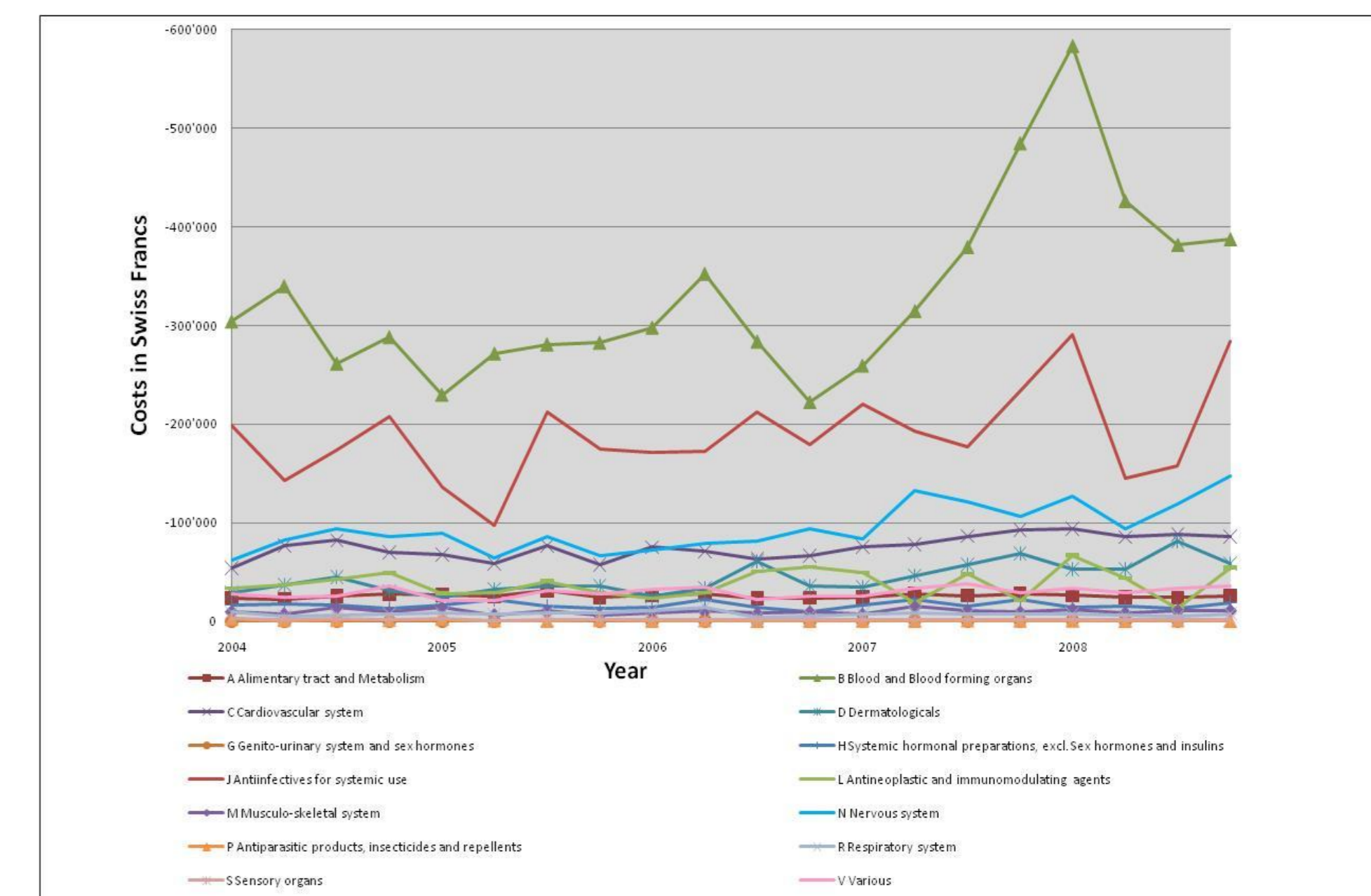


Figure 2: Costs by ATC code

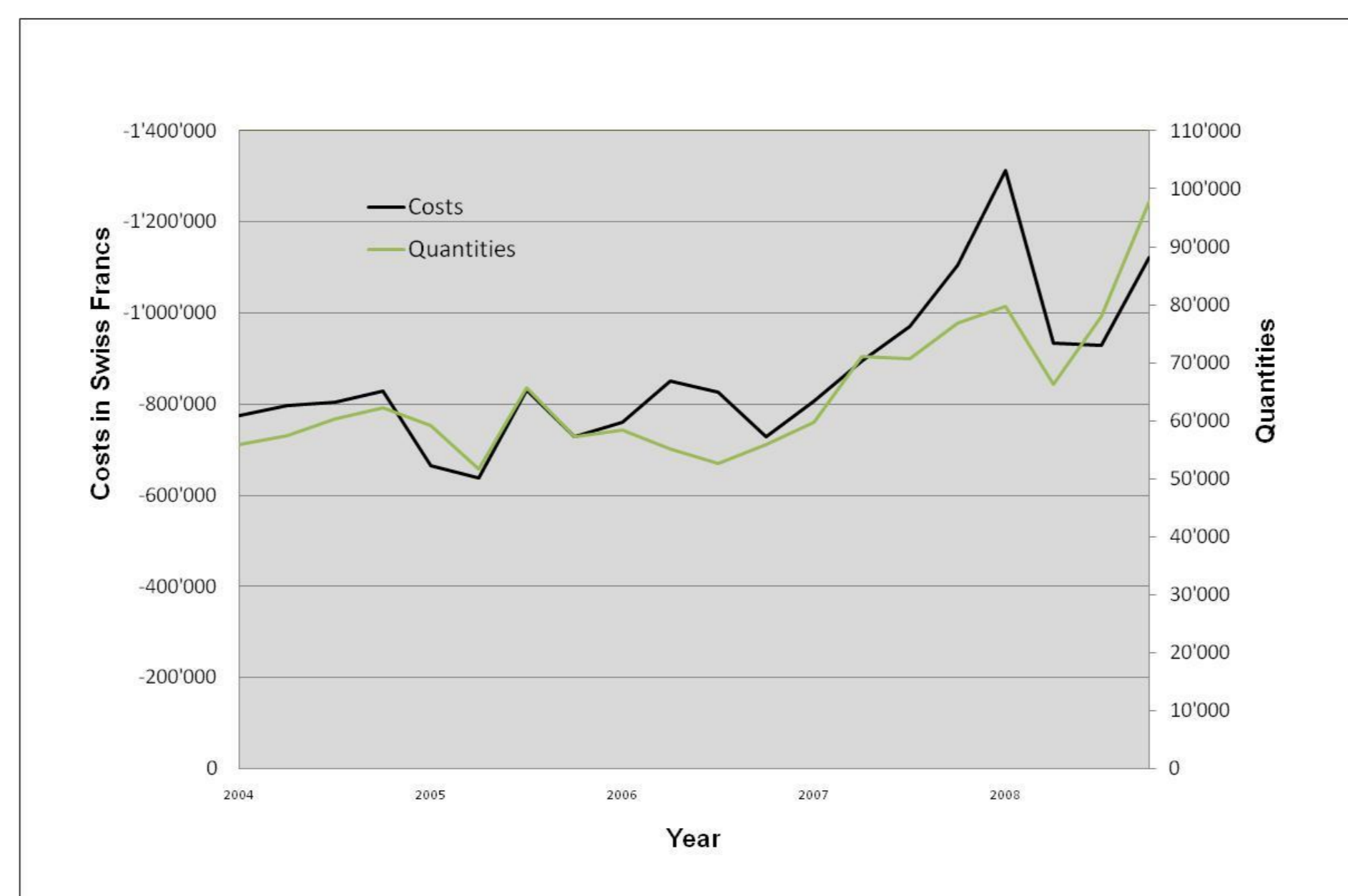


Figure 1: Evolution of costs and quantities

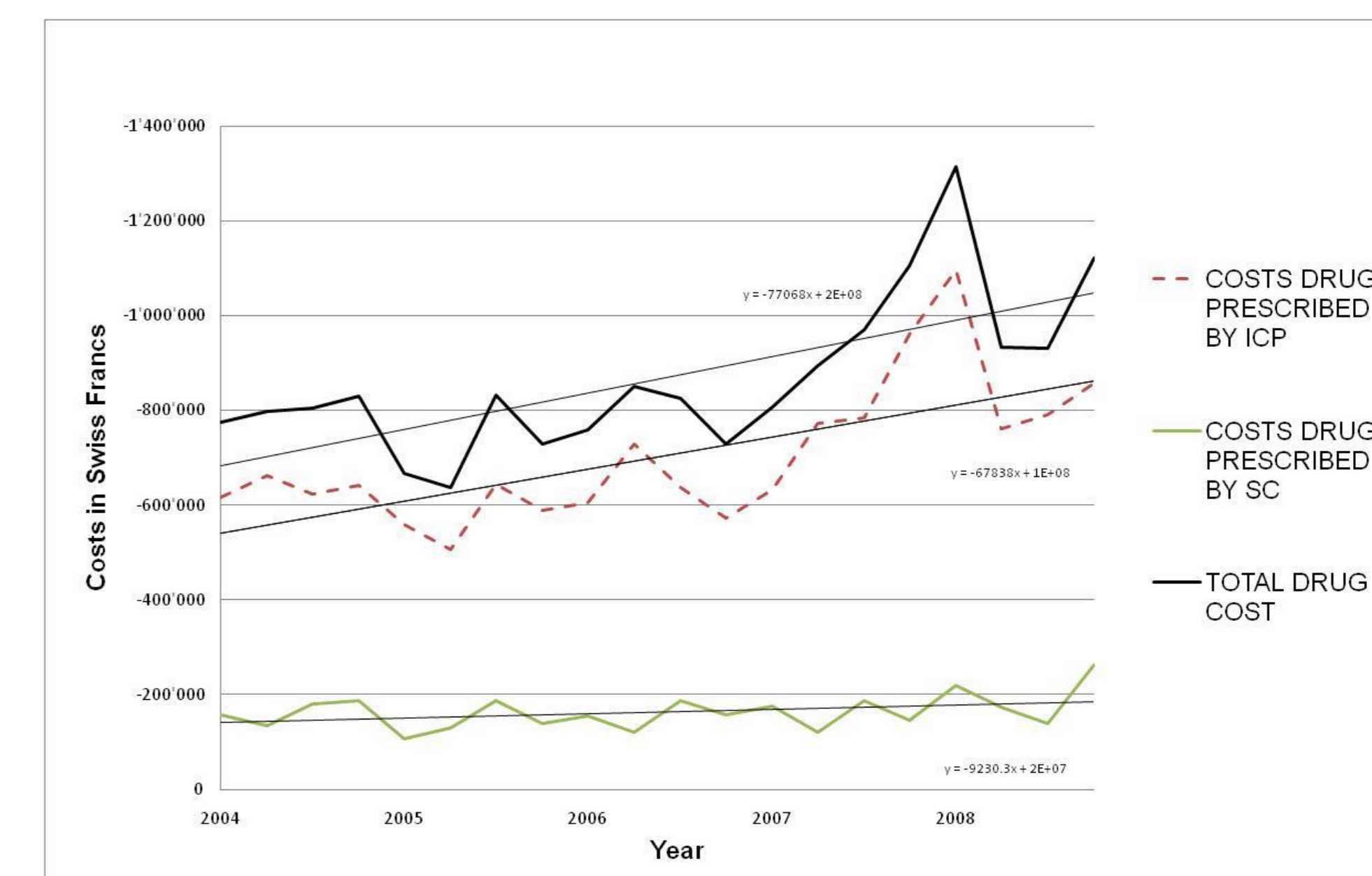


Figure 2: Costs by type of prescriber

## Conclusion

- A five-year increase in quantities and costs of drug prescription in an ICU is a matter of concern. However, inflation and increase in clinical activities were not taken into account.
- Rather unexpectedly, total costs and cost increases were generated mainly by ICP.
- A careful follow-up is necessary to try influencing this evolution through an institutional policy co-opted by all professional categories involved in the process.