

# Services provided by pharmacists in Swiss nursing homes

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This program is financially supported by the Federal Office of Public Health, LOA IV/1 funds (pharmaSuisse, santésuisse, curafutura) and the Hanela foundation.

## Introduction

**Background:** Drug-related problems are frequent among nursing home (NH) residents and are often caused by polypharmacy and potentially inappropriate medication. These drug-related problems may be detected by a pharmacist, e.g., by reviewing the residents' medication.

However, the collaboration with a pharmacist in Swiss NH varies widely. This may be due to heterogeneous regional regulations (e.g., whether dispensing by physicians is permitted) or due to cultural differences (i.e. earlier development of clinical services in some regions). Furthermore, provided pharmaceutical services can vary.

**Aims:** We sought to evaluate

1. how often Swiss NH collaborate with a designated pharmacist
2. how widespread services by pharmacists, e.g., medication reviews, are
3. in what types of NH medication reviews by pharmacists could further be disseminated.

## Conclusions

- In our observational study in Swiss nursing homes, we found that
1. a majority of nursing homes collaborate with a designated pharmacist
  2. services provided by pharmacists vary. Basic services like delivery of medication are widely disseminated, while clinical pharmacy services like participation in quality circles are much less common. In a majority of nursing homes, no medication reviews are provided by pharmacists.
  3. fewer medication reviews are provided by pharmacists in nursing homes
    - located in the German-speaking part of Switzerland and
    - who collaborate mainly with general practitioners not employed in NH.
 Thus, dissemination of medication reviews by pharmacists could be enhanced in those nursing homes, possibly ameliorating medication safety for residents.

Limitations of the study are possible differences in respondents' understanding of "designated pharmacist" and "medication review" and a non-response bias.

## Methods

**Setting:** The study was embedded in a national program "progress! Medication safety in nursing homes", conducted by Patient Safety Switzerland. The aim of the program is to improve medication safety in Swiss NH by reducing polypharmacy and potentially inappropriate medication.

**Method:** Online survey in the three main languages spoken in Switzerland (German, French, Italian), with 56 open and closed questions provided in EFS Survey. Besides socio-demographic questions, respondents were asked about the organizational characteristics of their NH, medication

processes and respondents' subjective satisfaction with medication processes. Directors of nursing in all Swiss NH with  $\geq 10$  beds ( $n=1525$ ) were invited to participate.

**Statistical Analysis:** We performed all analyses for all NH and for nursing homes with a designated pharmacist (further called "NH-P"). Chi<sup>2</sup>-test was used to examine the association between categorical variables. A significance level of  $p=0.05$  was used. Missing values were excluded casewise.

## Results

**NH characteristics:** 27.5% of questionnaires were returned. 81.8% of NH collaborate with a designated pharmacist, presumably often contractually regulated.

Of all responding NH, 73.7% were located in the German-, 20.1% in the French- and 6.3% in the Italian-speaking region. 44.2% of NH were located in regions where self-dispensing by physicians is permitted, 34.3% of NH in regions where self-dispensing is prohibited and 21.5% in regions with a mixed system. In 64.0% of NH the residents are solely looked after by general practitioners non-employed in the NH, while in 23.5% the majority of residents are cared for by employed physicians. 12.5% have a mixed system.

**Services provided (fig. 1 and 2):** Pharmacists provide an array of services ranging from the delivery of medications to clinical pharmacy services. The service most frequently provided is delivery of medication (64.6% in all NH and 72.0% in NH-P). Medication reviews by a pharmacist are provided in 35.2% of all NH and 40.7% of NH-P.

**Association between reviews and characteristics (fig. 3 and 4):** The provision of medication reviews was associated with language regions, types of regional dispensing regulation and types of physicians who care for the residents. Except among NH-P, there was no association between the provision of reviews and the type of collaboration with physicians.

**Satisfaction with review processes:** Self-reported satisfaction of the respondents with medication review processes was similar in all NH and in NH-P (66.1% vs. 67.2% satisfied). For NH-P, satisfaction was higher in homes where a pharmacist provides reviews compared to homes where no pharmacist provides them (79.1% vs. 59.0% satisfied,  $p<0.001$ ).

### In all NH

Figure 1: Pharmaceutical services provided in all NH

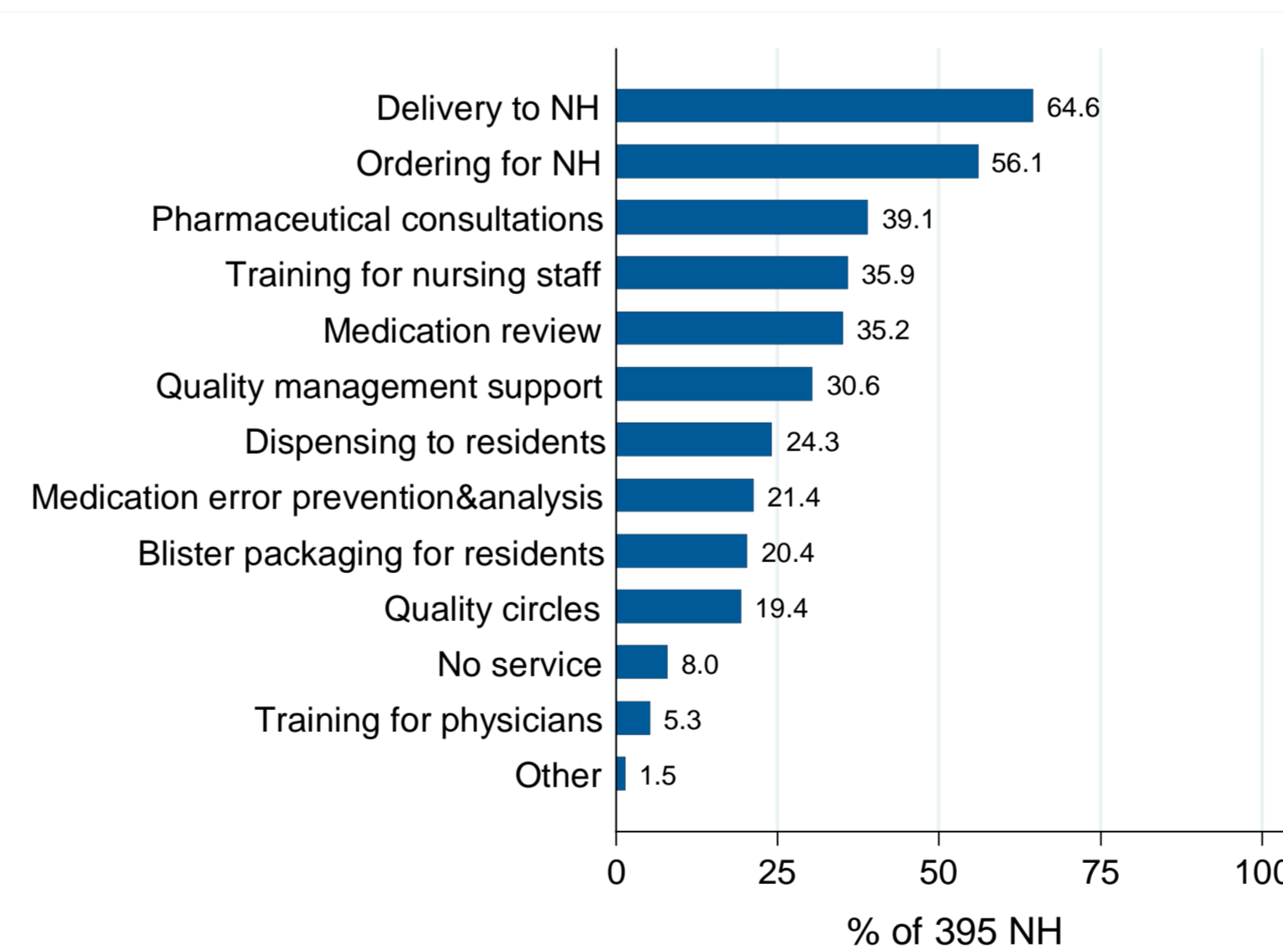
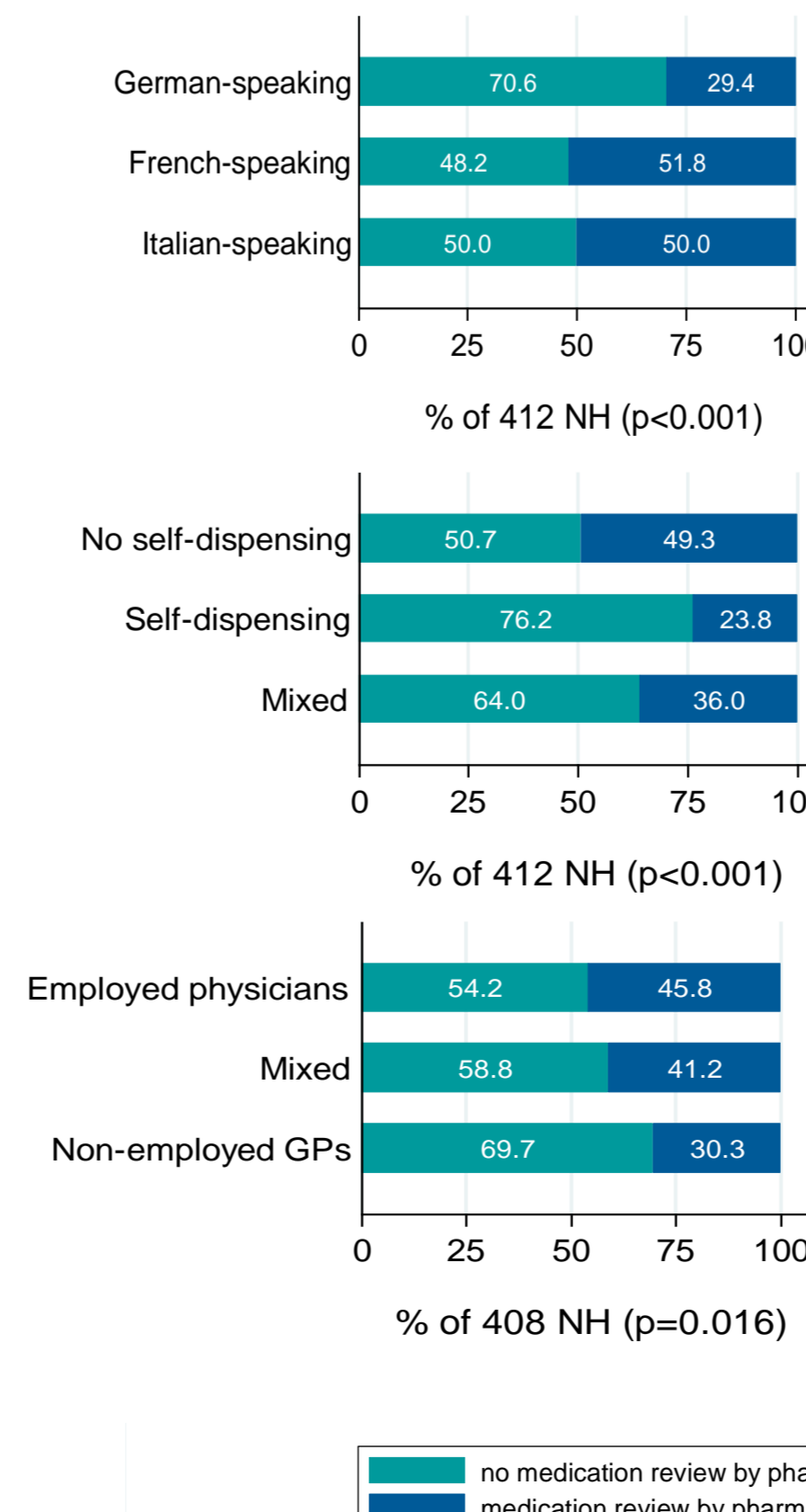


Figure 3: Association of medication reviews in all NH with language region, types of regional dispensing regulation and types of physicians who care for the residents



### In NH-P (with designated pharmacists, subgroup of NH)

Figure 2: Pharmaceutical services provided in NH-P

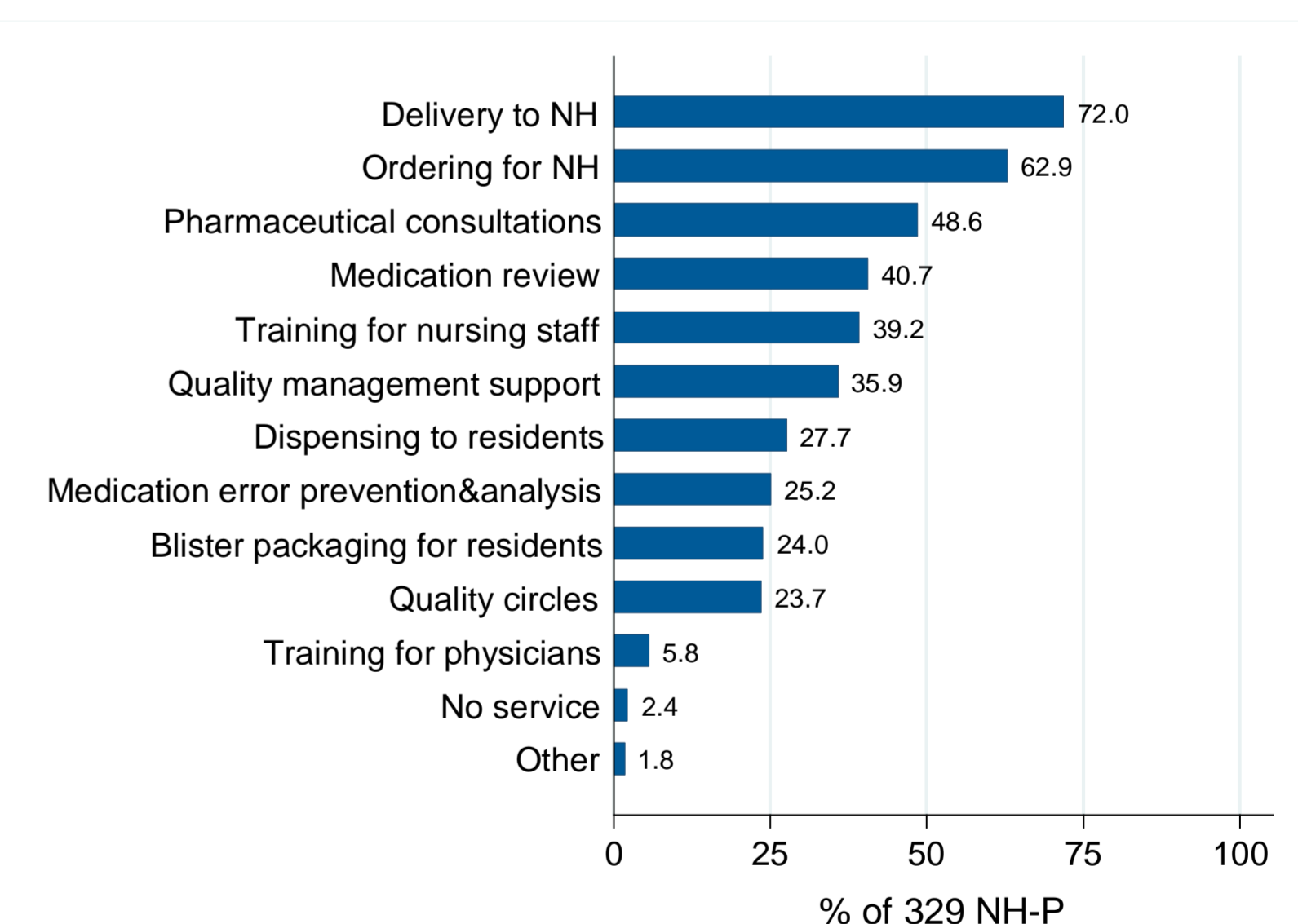


Figure 4: Association of medication reviews in NH-P with language region, types of regional dispensing regulation and types of physicians who care for the residents

