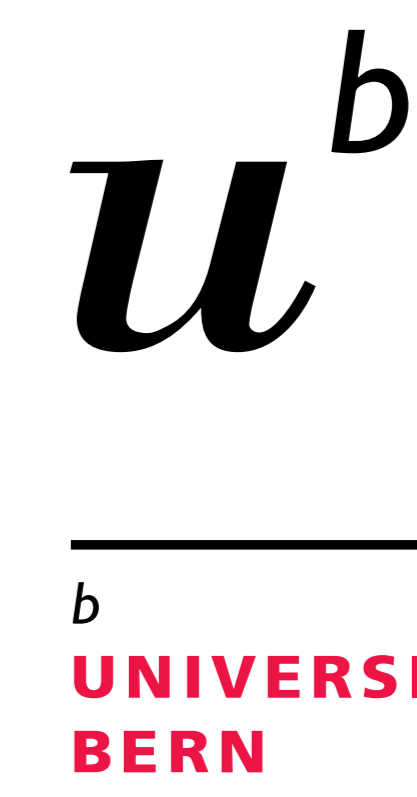
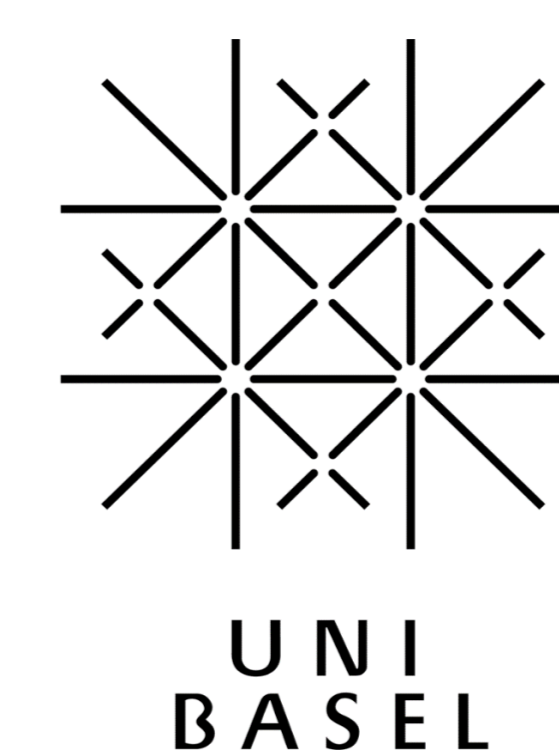


Pilot Study in Hospice Care – A Retrospective Data Analysis of Medication Prescriptions



D. Hischier¹, U. Wernli², S. Jean-Petit-Matile³, A. Kobleder⁴, C. Meier¹, A. Panchaud², C. Meyer-Masseti^{1,2,5}

¹ University of Basel, Department of Pharmaceutical Sciences, Clinical Pharmacy & Epidemiology, Switzerland

² University of Bern, Institute for Primary Health Care, Primary Care Pharmacy, Switzerland (correspondence: ursina.wernli@students.unibe.ch)

³ Hospiz Zentralschweiz, Littau, Lucerne, Switzerland

⁴ Eastern Switzerland University of Applied Sciences OST St. Gallen, Switzerland

⁵ Clinical Pharmacy, Inselspital Bern, Switzerland

Context

The hospice setting is a relatively young concept in Switzerland and the role of pharmacists has yet to be established. Currently, Swiss pharmacists are more involved in logistics than clinical pharmacy in contrast to other settings and countries. This master thesis aimed at exploring possible fields of activity for pharmacists in Swiss hospices.

Methods

- We performed a scoping review in order to identify and categorize pharmaceutical services in inpatient hospice care.
 - We analyzed retrospectively medication plans of inpatients of a hospice in central Switzerland over a one-year-period at three different points in time (t_1 : admission to hospice, t_2 : first adjustments to medication by hospice physician, t_3 : time of death).
- Eligibility criteria for patients were ≥ 18 years, admission and time of death in 2020, inpatient stay of minimum three days.

Results

- 23 publications were included in the review. The most frequently mentioned pharmaceutical services belonged to the following categories:
 - medication review**, optimizing medication regimens and drug therapy adjustments (**deprescribing** and symptom management)
 - medication counseling, training, and education** to patients/caregivers/families
 - medication supply chain management/provision of pharmaceuticals**
- The main findings of the retrospective medication analysis and the identified complexity of hospice care drug regimens are presented in *Table 1* and *Table 2*. We identified current roles of pharmacists in inpatient hospice care. Based on the findings, we deduced opportunities for pharmaceutical services to contribute to medication safety in inpatient hospice care.

Table 1: Baseline Patient Characteristics

patients total N (%)	58 (100%) [♀: 45%, ♂: 55%]
age (years) mean \pm SD [range]	71.7 \pm 12.80 [37-95]
median duration (days) of stay [range]	13.5 [3-146]
most common hospice-relevant diagnosis ICD-10, n (%)	Neoplasms, 51 (88.0%)
patients with polypharmacy drug regimens : (≥ 5 drugs)	t_1 : 43 (74.1%), t_2 : 20 (34.5%), t_3 : 8 (13.8%)

Table 2: Prescription Characteristics

drug regimen	time	mean drugs per patient [range]	prescribed drugs (N=)	off-label ^b drugs
regular	t_1	7.0 [0-19]	406	6/405 (1.5%)
	t_2	3.8 [0-13]	220	7/215 (3.3%)
	t_3	2.5 [0-11]	143	18/143 (12.6%)
PRN^a	t_1	6.7 [0-11]	390	24/389 (6.2%)
	t_2	4.4 [0-20]	257	63/257 (24.5%)
	t_3	5.1 [0-20]	293	87/293 (29.7%)
5 most frequently prescribed drugs (whole period observed)				
regular	morphine (n=60), fentanyl (n=48), sodium picosulfate (n=34), pantoprazole (n=26), dexamethasone (n=23)			
PRN	morphine (n=152), lorazepam (n=96), haloperidol (n=95), midazolam (n=85), metoclopramide (n=31)			
^a PRN = pro re nata/as-needed, ^b prescriptions with unknown off-label status excluded (off-label definition Swissmedic)				

Objectives

To deduct potential pharmacist contributions to medication safety in inpatient hospice care

- by identifying pharmaceutical services in the literature and
- by analyzing medication prescriptions and their changes over time.

Figure 1: routes of administration (regular)

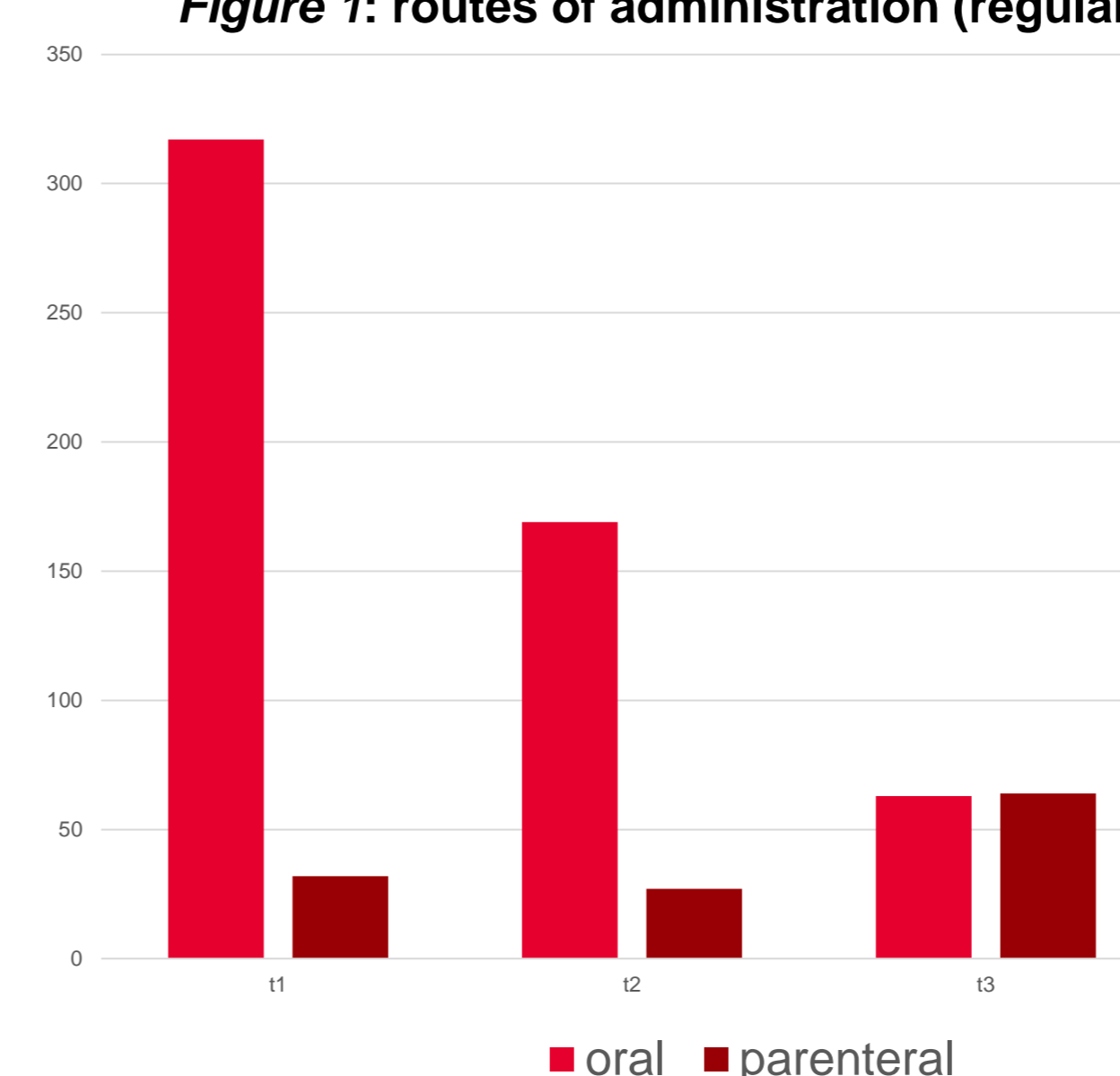
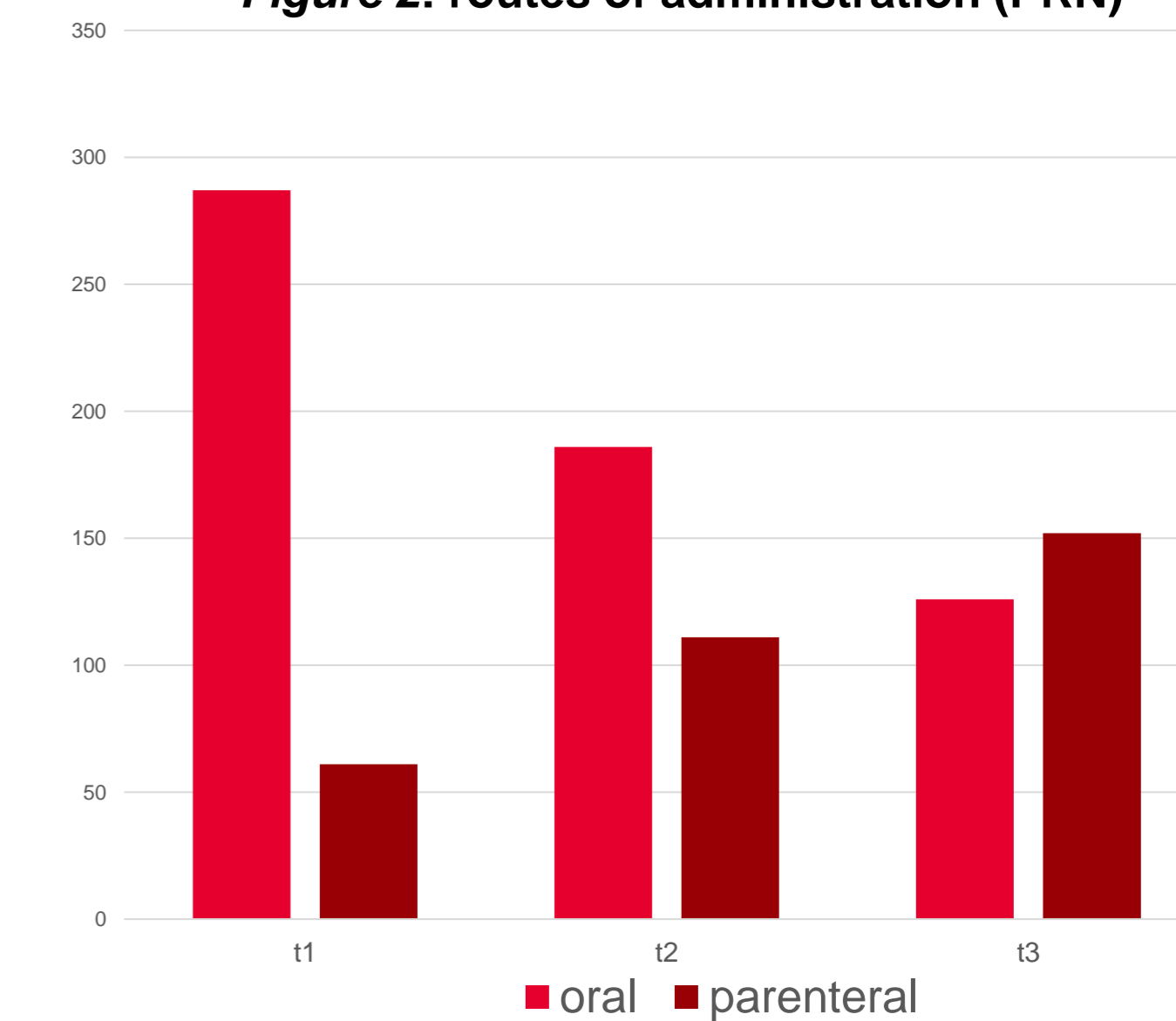


Figure 2: routes of administration (PRN)



Figures 1 and 2 show the shift of oral drug administration towards parenteral drug administration such as subcutaneous drug administration, which was often associated with **off-label use**. (PRN = pro re nata/as-needed-medication)

Conclusion

The findings of this master thesis reveal the proven benefit of pharmacists in other countries in the inpatient hospice setting (hospices and hospice-like structures) and the need to pursue those services in Switzerland. Therefore, more studies need to be conducted to overcome several barriers currently in the way of doing so. The pilot study showed clearly that the topic of deprescribing, in addition to symptom management and polypharmacy, is of great importance and pharmacist involvement could improve patient safety.

References

Kemp LO, et al. (2009) Medication reconciliation in hospice: a pilot study; Kotlinska-Lemieszek A, et al. (2014) Polypharmacy in patients with advanced cancer and pain: a European cross-sectional study of 2282 patients; Le V, et al. (2021) Retrospective analysis of a pilot pharmacist-led hospice deprescribing program initiative; Lee J, et al. (2006) Outcomes of recommendations by hospice pharmacists



Figures 3, 4, 5 and 6 show impressions of the hospice Zentralschweiz, Littau (LU)