



ÖSTERREICHISCHE
APOTHEKERMAMMER

Geriatric medication management in care institutions

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Overview

- Threats and Risks of Polypharmacy in the Elderly
- GEMED – a multiprofessional approach to improve care and treatment of nursing home residents in a rural area of Salzburg

Polypharmacy - Risk or Opportunity?

Definition of Polypharmacy (WHO): > 5 Drugs

Hyperpolypharmacy; > 10 Drugs

Incidence of Hyperpolypharmacy Age 70 – 90, AT 2014: 8,5 – 12,9 % [1]

Life Expectancy ↑ since 1970 > 10 years [2]

ES 1970: 72

ES 2014: 83,3

AT 1970: 66,5

AT 2014: 81,7

EU28 2014: 80,3

Number of Drugs ↑ Risk of Drug IA ↑ [3]

2 Drugs

0,17 % severe IA

0,7 % moderate IA

>8 Drugs

3,58 % severe IA

21,5 % moderate IA

Polypharmacy - **Risk** or Opportunity?

High Risk Medication

Methotrexat

Warfarin

Opioids

NSAR

ASS

Betablockers

High Risk Patients

Age > 80

4 comorbidities

Renal failure

Heart failure

Liver disease

Nr of drugs, > 8

Previous ADR

Saedder A et al; EurJClinPharmacology 2014

Onder G et al; Arch Intern Med 2010

Vulnerability of Nursing Home Residents

Somatic, cognitive and affective constraints

- immobility
- instability
- incontinence
- intellectual degradation
- isolation

Sensitivity to ADRs

- confusion
- delirium
- bleeding
- falls
- GIT disturbances
- incontinence
- renal insufficiency

High Risk Drugs for the Elderly

Indication	ATC Groups, Agents
Anxiolytics, Hypnotics	Benzodiazepines
Antidepressants	TCA, SSRI, SNRI, MAO-Inhibitors
Antipsychotics	Thioridazin, Haloperidol, Olanzapin, Clozapin
Cardiovascular Drugs	Diuretics, β -Blockers, ACE-Inhibitors, Ca^{2+} Channel Blockers, AT_1 -Antagonists, α -Blockers, Digitalis, Antiarrhythmics
Anticholinergics	Oxybutinin, Solifenacin, Tolterodin
Antiemetics, Antihistamines	Metoclopramid, Dimenhydrinat, Doxylamin

Causes of Adverse Drug Events in Nursing Homes

60% Prescription – Dosage errors , interactions , inappropriate drugs

80% Therapy monitoring – insufficient clinical observation , symptom and laboratory monitoring

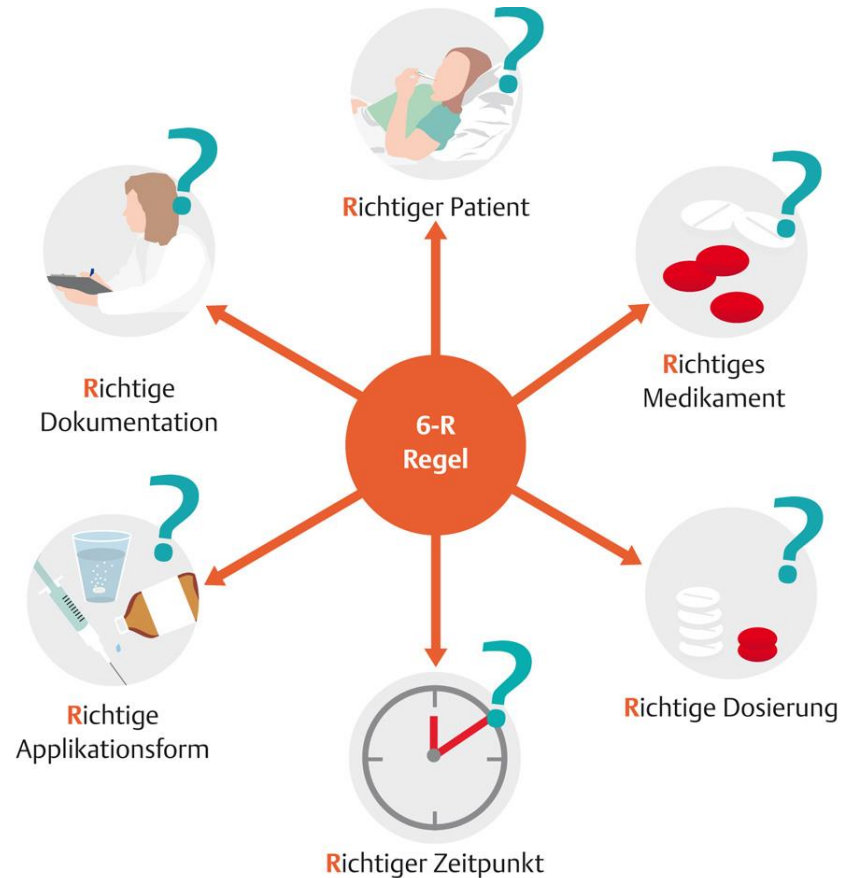
13% Application – crushing of unsuitable drug formulations, improper storage, handling and documentation

<5% Dispensation

Gurwitz et al. The incidence of adverse drug events in two large academic long-term care facilities. Am J Med 2005; 3:251–258.

Multiprofessional Medication Management

An opportunity for
nurses, pharmacists
and doctors
to solve/reduce
problems concerning
medication errors
and ADRs in nursing
home residents



Medication induced confusion and fall

April 2015

Female, 87 years old
lives at home, needs care for 24 h
(nurse, family)
confusion, sleep disorders, anxiety,
several falls in the last 3 months,
weakness of muscles from thigh to foot,
needs help to move from chair to
wheelchair

Blood Pressure 110/60 (120/80)
Cholesterol 158mg/dl (140-200)

Medication:

Dabigatran 110mg	1-0-1
Digitoxin 0,1 mg	1/2-0-1
Fosinopril/HCT	1-0-0
Fosinopril 20 mg	0-0-1
Amlodipin 10 mg	1-0-0
Simvastatin 40 mg	1-0-0
Amitryptilin 10 mg	1-0-2
Lornoxicam 8 mg	1-0-1

amlodipin ↔ simvastatin
blood level simvastatin 77% ↑ myopathy

June 2015: **Lornoxicam, Simvastatin, Amitryptilin EX, Amlodipin ↓**
No more fall since change of medication, anxiety ↓, mental condition ↑

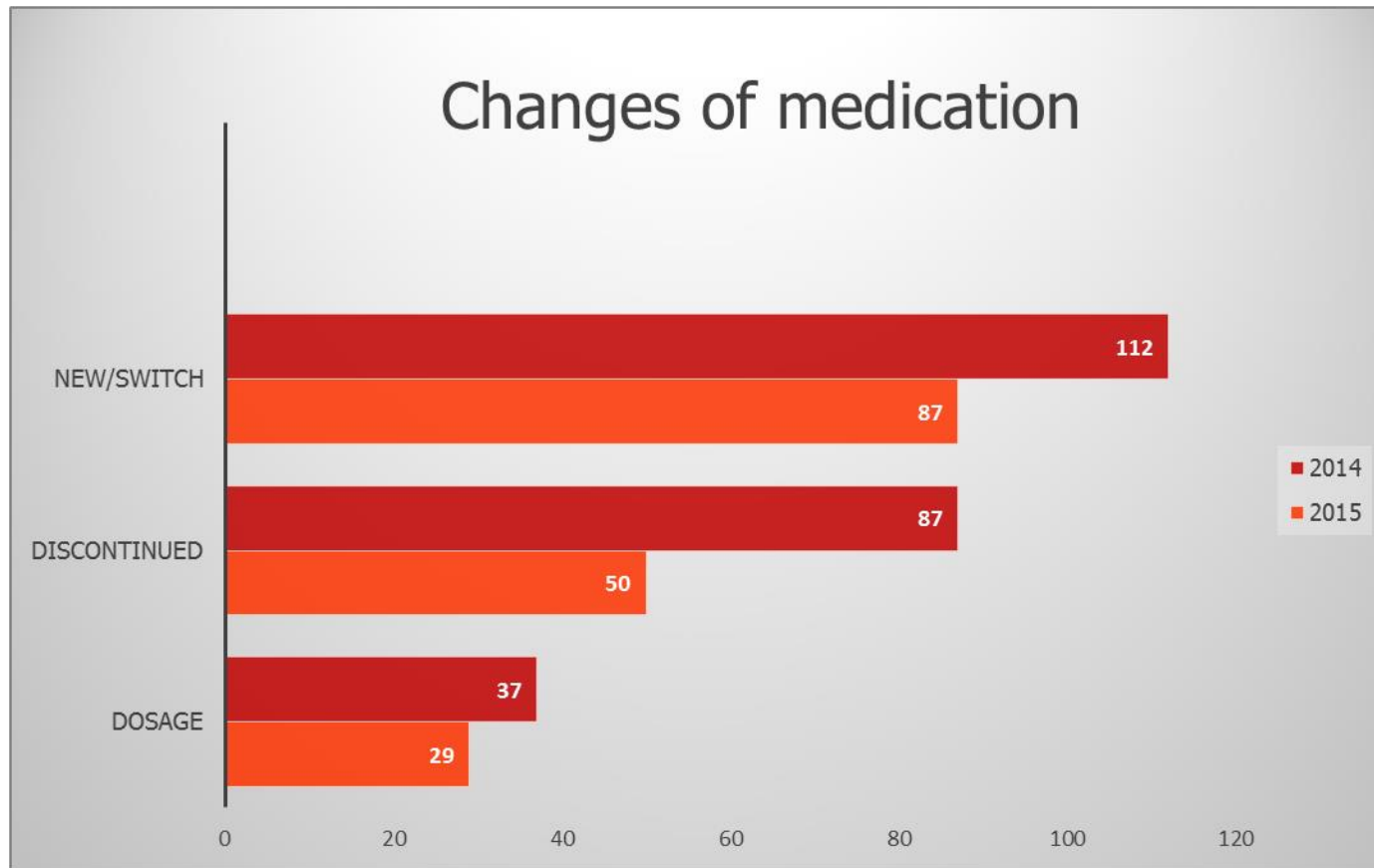
Two Years pharmaceutical Care in the Nursing Home Bad Gastein

2014-2015:

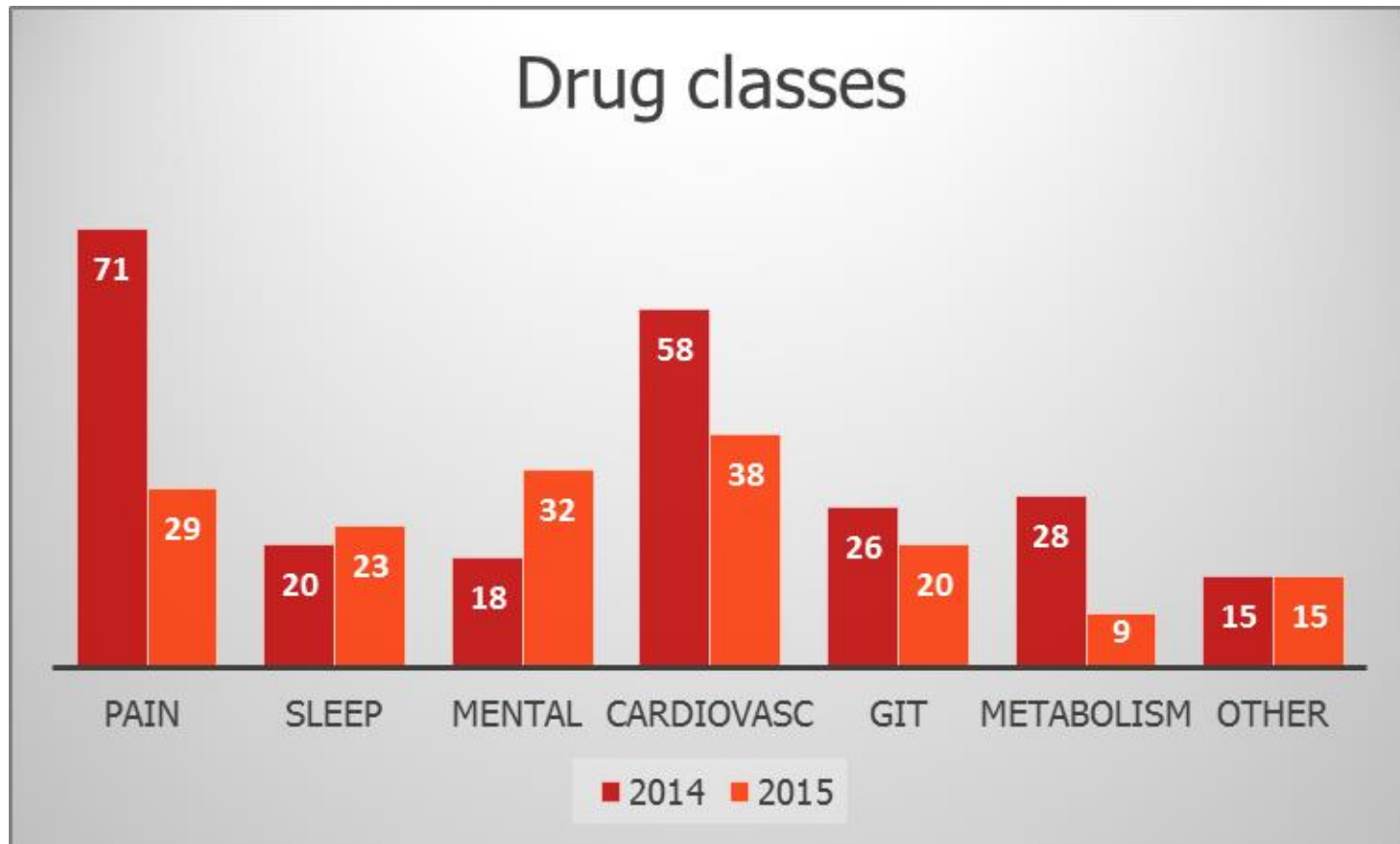
weekly visit of the pharmacist in the nursing home
discussion of drug related problems with the nurse, high risk
drugs for the elderly, detection of ADRs
proposals for change/discontinuation of drugs for the doctor

	Residents (n)	Gender	Age (Ø)	Drugs/Resident (Ø n)
2014	73	24 m; 49 f	81,9 (min 54, max 98); m: 75,8; f: 84,2	8,5 (min 0, max 20); m: 6,2; f: 9,6
2015	76	31 m; 45 f	81,6 (min 55, max 96); m: 75,8; f: 84,3	8,4 (min 0, max 22); m: 7,3; f: 9,2

Results of 2 years pharmaceutical care in the nursing home Bad Gastein



Results of 2 years pharmaceutical care in the nursing home Bad Gastein



GEMED

A Multiprofessional Medication Management Project in Nursing Homes

A systematic approach to solve problems of polypharmacy

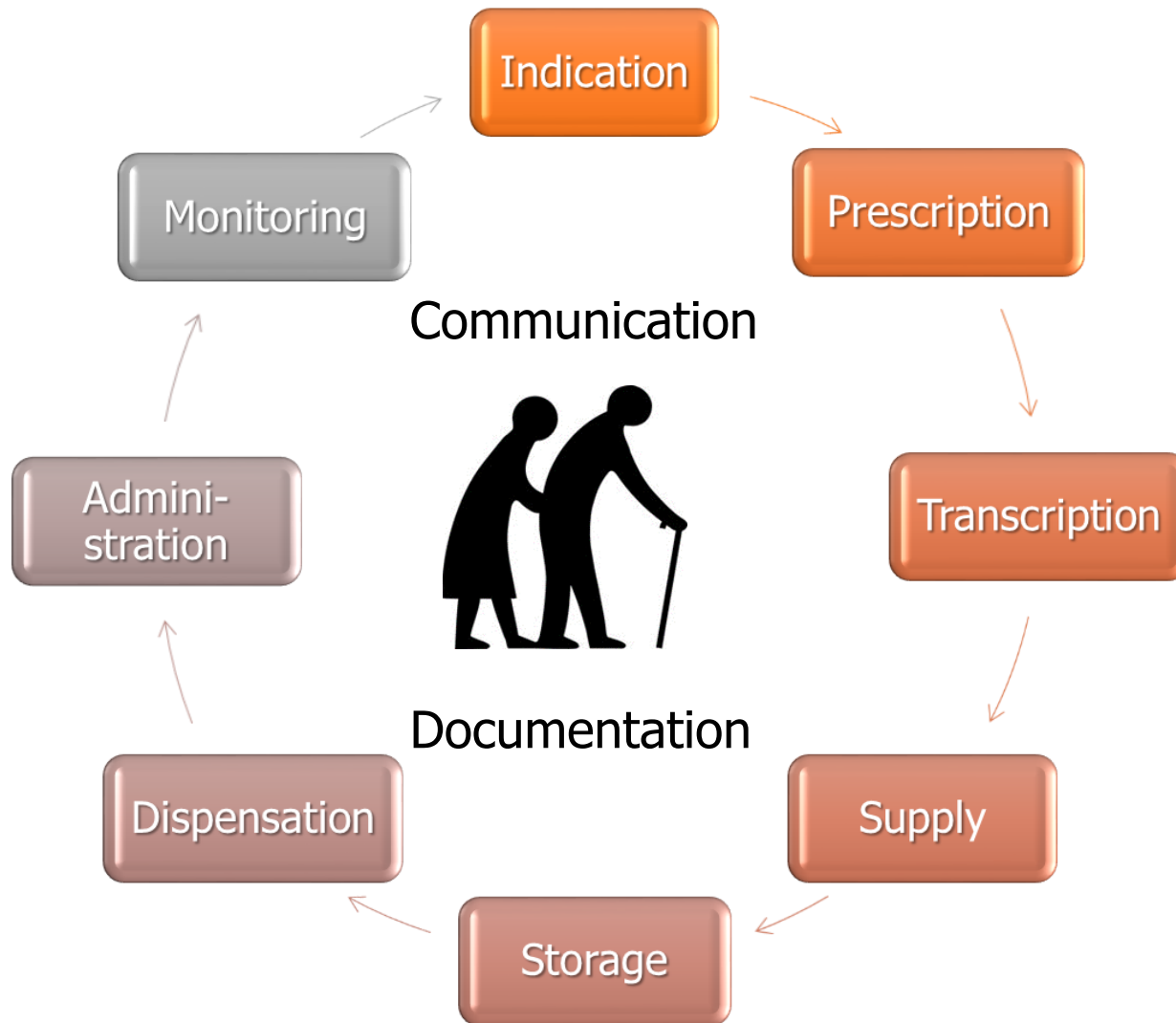
by Diemut Strasser und Elisabeth Kretschmer



GEMED - Goals

- Improvement of quality of the care and treatment of nursing home residents
- Improvement of collaboration and risk communication (nurses-pharmacists-doctors)
- Measurement of the impact of pharmaceutical services in nursing homes
- „Best Practice Model“ for a nationwide roll out

Medication Process



Medication-Therapy-Management

- Screening for Medication Risks, every month

Medication-Process-Management

- Screening for Medication Errors, every 3 months

Medicines Committee

- Pharmacist-Nurse-Doctor (network unit)
- local nursing home, every 3 months

Quality-Circles

- All network units of the study area, every 3 months

GEMED Structure

9 Nursing Homes → 600 Residents

(Salzburg, Region Pongau and Pinzgau)

9 Community Pharmacies

(supplying pharmacies of the study area)

~ 20 Family Doctors (general practitioners) with
treatment contract of the residents

Duration of the study: 12 months

Thank you for your attention!

