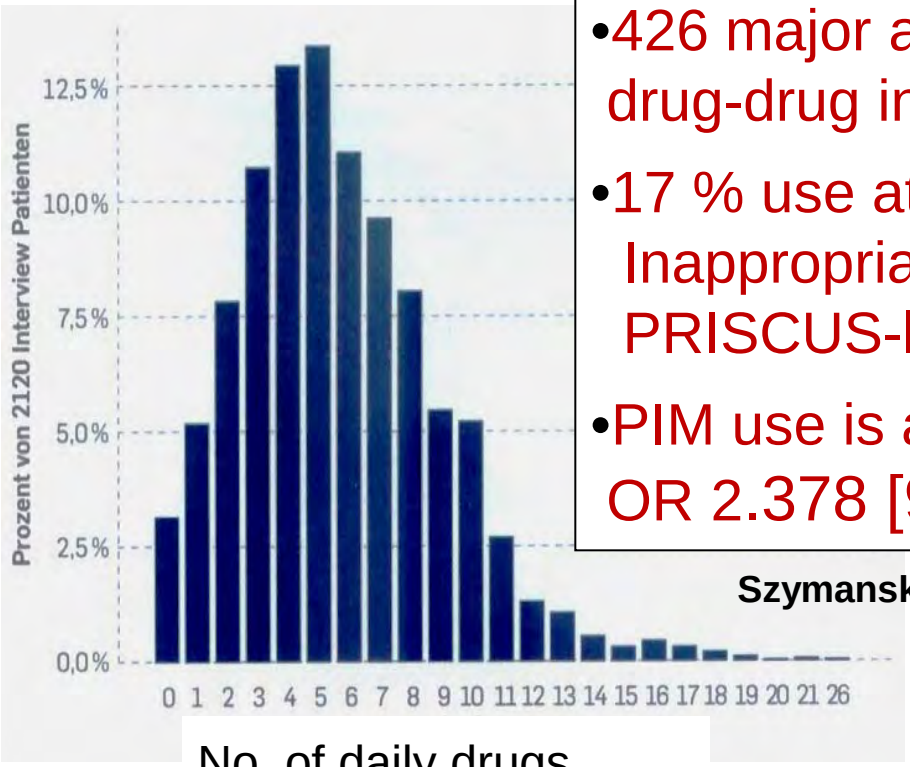
Problems of multimorbidity and polypharmacy

Comment from

Petra A. Thürmann
Philipp Klee-Institute for Clinical Pharmacology, HELIOS Clinic Wuppertal,
University Witten/Herdecke, Germany

Polypharmacy and multimorbidity in a cohort of community-dwelling elderly German seniors

- 1,936 seniors, 53 % females
- 78.2 ± 4.2; 4.6 ± 2.7 diseases
- Polypharmacy (≥ 5 drugs): 64 % patients
- 426 major and 16 contraindicated drug-drug interactions (23 %)
- 17 % use at least one Potentially Inappropriate Drug (PIM according to PRISCUS-list)
- PIM use is associated with polypharmacy OR 2.378 [95 % CI 1.715; 3.297]



Szymanski et al., Br J Clin Pharmacol 2010, 70 (Suppl.1), 30

Preventable drug-related hospital admissions: the role of prescribing, monitoring and adherence

Underlying cause	Median %	range
Prescribing problem	30.6	11.1 – 41.8
Monitoring problem	22.2	0.0 – 31.1
Patient adherence	33.3	20.9 – 41.7
Unclassified		6.0 – 39.0

n = 5 prospective studies; n = 335 ADRs

Meta analysis by Howard et al, Br J Clin Pharmacol 2006

„Dangerous“ and „beneficial“ polypharmacy: examples and issues

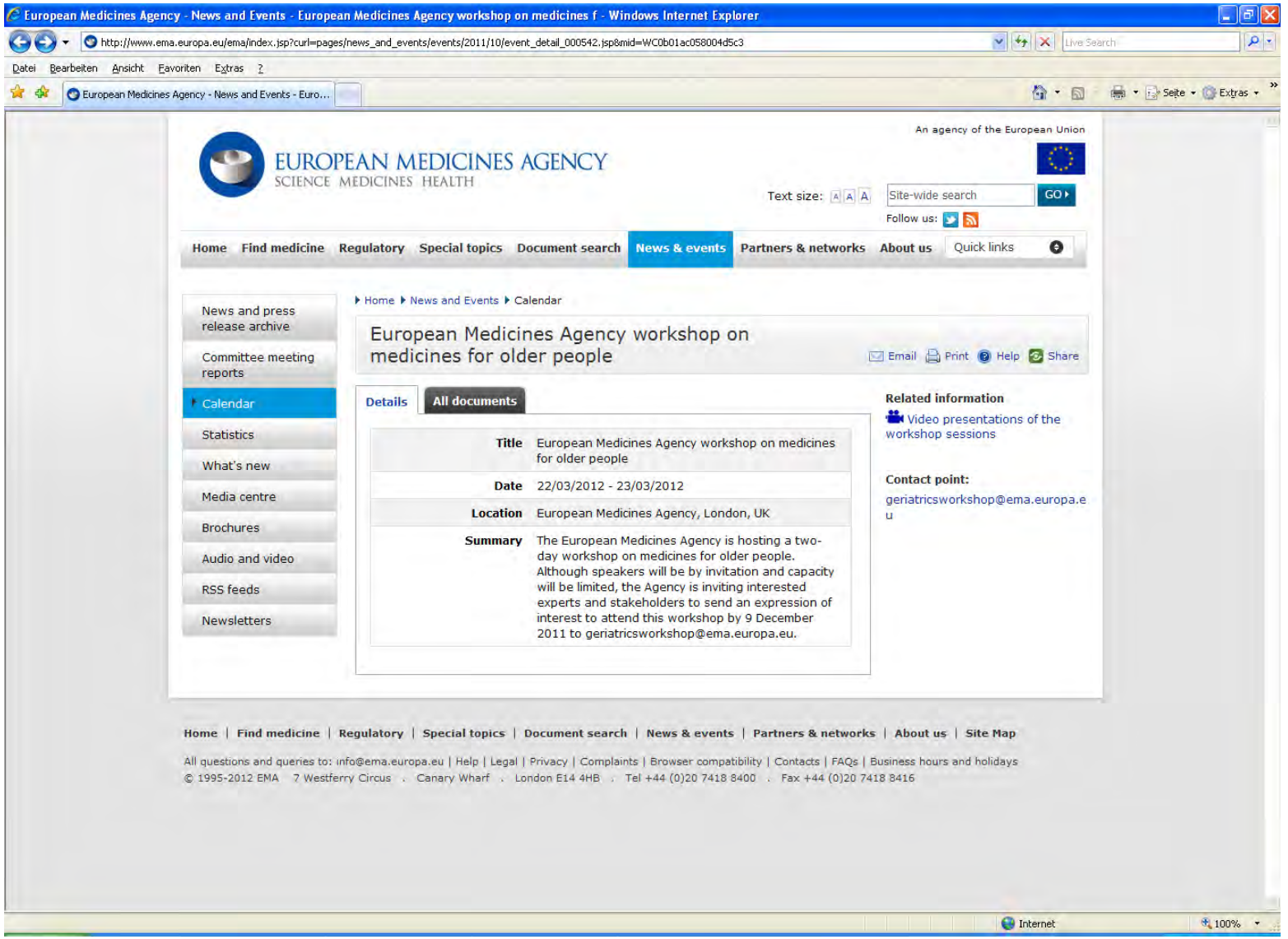
- „Beneficial“ polypharmacy:
  - HIV treatment, immunosuppresion following organ
- Two principles of pharmacotherapy:

  ☝**All drugs** can be dangerous
  ☝**Not only the drugs** are dangerous, but the prescribers
  - drug treatment of one disease results in worsening of another condition

Yes, we do have at least two problems

- … do we have solutions?

Efficacy and safety of drugs in multimorbid patients with polypharmacy



Modification of regulatory Guidance/Guidelines for the Geriatric population

Final Concept Paper
E7(R1): Studies in Support of Special Populations: Geriatrics
(Revision of the ICH E7 Guideline)
23 October 2008
Endorsed by the Steering Committee on 24 September 2008*

- N = 100 no longer sufficient
- > 65 years, but also very elderly
- Other endpoints (QoL, function) rather than living longer
- Access to trials (!)
- Frailty
- Adapted dosages and formulations

- PopKin or formal PK-studies
- In some indications, e.g. Parkinson, strata > 75 and > 85
- Adequate characterisation of safety in very elderly!!
- Geriatric Development Plan
- Specific elements in trials to consider comorbidities/comedication

- **Regulators are (slowly) catching up**
  - **Information for prescribers will become more complex!**
- **Prescribers?**

Assessing Care of Vulnerable Elders (ACOVE Quality indicators)

- Up-dated medication list, annual drug review
- Proper instructions about drugs
- Documentation of drug response
- Special instructions for treatment with
  - oral anticoagulants
  - ACE-inhibitors
  - Loop diuretics etc.
- Special care with NSAID, NSAID + antiplatelet agents/coumarins
- Drugs-to-avoid e.g. drugs with strong anticholinergic properties

Shrank et al, JAGS 2007

STOPP criteria: Screening tool of older persons' potentially inappropriate prescriptions

- STOPP criteria include not only drugs
  - **but also drug-drug and drug-disease interactions, fall risk increasing drugs, drug duplications etc.**
- Prospective analysis 715 patients > 65 years, admitted acutely to hospital
- Application of Beers PIM and STOPP criteria to assess medication problems causative für hospital admission
  - Beers PIM in 25 %, STOPP in 35 % of patients
- 90 admissions caused by drug therapy (12.5 %)
  - **82 (90%) detected by STOPP criteria**
  - **43 (48 %) detected by Beers criteria**

  $p < 0.001$
- STOPP criteria more flexible and sensitive for medication-related serious health problems

Gallagher & O'Mahony, Age Aging 2008

Fit fOR The Aged (FORTA) criteria

A	B	C	D
Benefit proven for seniors, preferably in RCTs	proven efficacy, but e.g. increased risk in the elderly	unfavourable benefit/risk profile, could be omitted in patients with polypharmacy	**Drugs which should be avoided (category C) + safer alternatives available**
ACE-inhibitors + long-acting calcium antagonists in hypertensive seniors; statins	diuretics or betablockers in hypertensive seniors	digoxin and spironolactone in heart failure, amiodarone in atrial fibrillation	**= potentially inappropriate drugs ☠updated Beers 2012 ☠PRISCUS-list**

Wehling M, JAGS 2009

Benefit of criteria and tools for multimorbidity and polypharmacy?

- Can they be used?
  - Few studies have shown the practicability of tools
- Is their benefit proven?
  - VERY few RCTs have been shown that

  ☺prescribing and/or patient outcome can be improved
- More RCTs with huge no. of patients and complex interventions?
- Implementation of some tools, learning from best practice and adaptation
- Measuring quality indicators, application of epidemiological methods, use of routine data

Benefit of criteria and tools for multimorbidity and polypharmacy?


Thank You!