Patients Inclusion Criteria
- acute hospital admission (not in a geriatric unit) in 2008 at St Luc university hospital
- age ≥ 75 years
- frailty score ISAR ≥ 2/6
- Comprehensive Geriatric Assessment by the internal geriatric liaison team

Primary Outcome
Detection of PIM and PPO events at home
Screening of the drugs taken at home according to STOPP&START* by a clinical pharmacist and a geriatrician

Secondary Outcome
Link between PIM/PPO and admission
Based on clinical judgment (pharmacist + geriatrician)
Multivariate analysis to identify risk factors

Results

302 frail older people included
Age 84 years ± 5; ♂ 36 %
Home 83 % (alone 43 %) vs. nursing home 17 %
ISAR score : average 3,5 ± 1
6 ± 3 drugs/day
Patients taking ≥ 5 drugs/day : 75 %

2,028 drugs screened for STOPP
302 patients screened for START

5 most frequent PIM
Prevalence % (302patients)
Benzodiazepines 24
Aspirin 12
Opiates 8
β-blockers 6
Tricyclic antidepressants 5

5 most frequent PPO
Aspirin 21
Statins 19
Calcium and vitamin D 17
Vitamin K antagonists 11
Bisphosphonates 10

Potentially inappropriate medications (PIM) according to STOPP
Detection of 210 PIM events
Prevalence 48 % (144/302) (~1 drug/10)

Link between PIM and admission
Hospital admission was related to PIM in 54 patients (18%):
46 falls with fracture
指导下影响者 (benzodiazepines, ...)
2 bleedings
指导下 aspirin, NSAIDs
2 heart failure
指导下 NSAIDs
4 others

Predictors of PIM-related admission
Multivariate analyses:
History of recent falls (p<0.001)

Potentially inappropriate prescribing omissions (PPO) according to START
Detection of 362 PPO events
Prevalence 63 % (189/302) (~2 patients/3)

Link between PPO and admission
Hospital admission was related to PPO in 38 patients (13%):
19 falls with fracture (while not receiving prevention)
指导下 calcium, vitamin D, bisphosphonates
16 cardiovascular problems (ischemic heart disease, heart failure...)
指导下 aspirin, statins, ACEI
3 others

Predictors of PPO-related admission
Multivariate analyses:
Previous osteoporotic fracture (p<0.001)
Atrial fibrillation (p=0.004)

Conclusions. Using STOPP and START, inappropriate prescriptions (both PIM and PPO) were found to be frequent and associated with a substantial number of acute hospital admissions in frail older persons.
Fall-induced osteoporotic fracture was the most important cause for hospital admission related to inappropriate prescribing and should be a priority for pharmacological optimisation approaches.