

Supplementary Information 2 Comparison of 95% confidence interval of individual proportion regarding to the stages of hospital stay.

2.1.1 Problems of drug-related problems: using Chi-square test

Category/subcategory of DRP problems according to PCNE v 8.02 classification	95% Confidence interval			p-value (Test for difference among stages)
	At admission n = 77	During the hospital stay n = 91	At discharge n = 148	
Treatment effectiveness				
Effect of drug treatment not optimal	0.190, 0.321	0.057, 0.120	0.079, 0.148	0.001 ^a
Untreated symptoms or indication	0.060, 0.128	0.051, 0.109	0.388, 0.537	< 0.001 ^a
Treatment safety				
Adverse drug event (possibly) occurring	0.341, 0.500	0.324, 0.478	0.142, 0.242	< 0.001 ^a
Other problems				
Unnecessary drug-treatment	0.031, 0.077	0.181, 0.304	0.034, 0.074	< 0.001 ^a

DRP drug-related problem, PCNE Pharmaceutical Care Network Europe

^a p-value of Chi-square for comparing three groups, statistical significance 0.05

2.1.2 Problems of drug-related problems: using Fisher's exact test

Category/subcategory of DRP problems according to PCNE v 8.02 classification	95% Confidence interval		p-value (Test for difference among stages)
	During admission (at admission and during the hospital stay) n = 168	At discharge n = 148	
Treatment effectiveness			
No effect of drug treatment	0.008, 0.024	0.009, 0.027	1.000 ^b

^b p-value of Fisher's exact test for comparing two groups: one group was DRPs occurred during admission (combination of at admission and during the hospital stay) and another was the DRPs at discharge, statistical significance 0.05

2.2.1 Causes of drug-related problems: using Chi-square test

Category/subcategory of DRP causes according to PCNE v 8.02 classification	95% Confidence interval			p-value (Test for difference among stages)
	At admission	During the hospital stay	At discharge	
Drug selection				
Inappropriate drug (within guidelines but otherwise contraindication)	0.060, 0.128	0.032, 0.076	0.012, 0.034	0.026 ^a
Inappropriate duplication of therapeutic group or active ingredient	0.017, 0.051	0.097, 0.185	0.016, 0.040	< 0.001 ^a
No drug treatment in spite of existing indication	0.076, 0.154	0.044, 0.098	0.415, 0.564	< 0.001 ^a
Dose selection				
Dose too low	0.092, 0.179	0.026, 0.065	0.027, 0.060	0.006 ^a
Dose too high	0.171, 0.295	0.189, 0.315	0.083, 0.154	0.007 ^a

DRP drug-related problem, PCNE Pharmaceutical Care Network Europe

^a p-value of Chi-square for comparing three groups, statistical significance 0.05

2.2.2 Causes of drug-related problems: using Fisher's exact test

Category/subcategory of DRP problems according to PCNE v 8.02 classification	95% Confidence interval		p-value (Test for difference among stages)
	During admission (at admission and during the hospital stay) n = 168	At discharge n = 148	
Drug selection			
Inappropriate drug according to guidelines/formulary	0.037, 0.077	0.016, 0.040	0.211 ^b
No indication	0.008, 0.024	0.009, 0.027	1.000 ^b
Inappropriate combination of drugs or drugs and herbal medication	0.002, 0.012	0.003, 0.013	1.000 ^b
Too many drugs prescribed for indication	0.023, 0.053	0.006, 0.020	0.111 ^b
Drug form			
Inappropriate dosage form	0.014, 0.036	0.012, 0.034	1.000 ^b
Dose selection			
Dosage regimen not frequent enough	0.005, 0.018	0, 0.007	0.500 ^b
Dose timing instructions wrong, unclear or missing	0.030, 0.065	0.019, 0.047	0.609 ^b

2.2.2 Causes of drug-related problems: using Fisher's exact test (cont.)

Category/subcategory of DRP problems according to PCNE v 8.02 classification	95% Confidence interval		p-value (Test for difference among stages)
	During admission (at admission and during the hospital stay) n = 168	At discharge n = 148	
Treatment duration			
Duration of treatment too short	0, 0.006	0.006, 0.020	0.219 ^b
Duration of treatment too long	0.011, 0.030	0, 0.007	0.126 ^b
Others			
Inappropriate outcome monitoring	0.002, 0.012	0, 0.007	1.000 ^b
Drug order incorrect or incomplete	0.002, 0.012	0.009, 0.027	0.344 ^b

^b p-value of Fisher exact test for comparing two groups: one group was DRPs occurred during admission (combination of at admission and during the hospital stay) and another was the DRPs at discharge, statistical significance 0.05