Supplementary Table S1. Detailed description of FRIDs evaluated in studies

		CNS-Active									Cardiovascular					Other			
	Source for FRID Ascertainment	Anticholinergics[a]	Antidepressants	Anti-dementia	Anti-Parkinson	Antipsychotics	Anti-seizure	Benzodiazepines/Sedatives/Hypnotics	Opioids	Skeletal muscle relaxants	Anti-arrhythmics	Antihypertensives[b]	Digoxin	Diuretics	Nitrates and Vasodilators	Alpha blockers	Beta blocker eye drops	Hypoglycemics	Other[c]
OBSERVATIONAL STUDIES																			
Bennett[14]	Medical records	x	x			x		x	x		x	x	x		x		x	x	
Benuza-Sola[15]	Medical records		x		x	x		x	x		x	x	x	x	x	x			
Francis[16]	Medical records		x			x	x	x											
Hill-Taylor[17]	Pharmacy claims							x											
Kragh[18,d]	National registry	x	x		x	x	x	x	x		x	x	x	x	x				
Marvin[19]	Medical records	x				x		x	x			x			x	x			
McMahon[20]	Pharmacy claims		x	x		x		x											
Sjöberg[21]	National registry	x	x		x	x		x	x		x	x	x	x	x	x	x		
Trenaman[22]	Pharmacy claims					x													
Walsh[23]	Medical records					x		x							x				
INTERVENTION STUDIES																			
Blalock[24]	Pharmacy records		x			x	x	x	x	x									
Boyé[25]	Interview, GP, pharmacist	x	x		x	x	x	x	x		x	x	x	x	x	x		x	x
Sjöberg[26]	Medication list		x		x	x		x	x			x		x	x	x			
van der Velde[9]	Interview, GP, pharmacist	x	x			x		x	x		x	x	x	x	x	x	x	x	

Abbreviations: ACE = angiotensin-converting enzyme; ARB = angiotensin II receptor blocker; CNS = central nervous system; FRID = fall-risk-increasing drug; GP = general practitioner; HMG-CoA = 3-hydroxy-3-methylglutaryl coenzyme A; NSAIDs = nonsteroidal anti-inflammatory drugs

[a]Anticholinergics include: antihistamines, antivertigo, urinary antispasmodics, and/or others not otherwise specified

[b]Antihypertensives include: ACE inhibitors/ARBs (and others acting on renin angiotensin system), beta blockers, calcium channel blockers, and others not otherwise specified

[c]"Others" within Other category include: steroids, NSAIDs, anti-gout, hydroquinine, adrenergics (respiratory), HMG-CoA reductase inhibitors

[d]Kragh: Noted cardiovascular medications, but did not specify individual classes (though excluded lipid-lowering medications)

Supplementary Table S2. Prevalence of FRID use at admission among observational studies

Study	Overall FRID Use	CNS-Active FRID Use		Cardiovascular FRID Use		Other FRID Use	
Bennett[14]	2.5 ± 2.1[a]	Anxiolytics Antidepressants Antipsychotics Opioids Anticholinergics Antihistamines Antivertigo	16.0% 24.0% 3.0% 21.0% 14.0% 0.0% 1.0%	Antihypertensives Antiarrhythmics Vasodilators Digoxin	74.0% 3.0% 7.0% 4.0%	Hypoglycemics Beta blocker eye drops	12.0% 1.0%
Benuza-Sola[15]	91.3%	Opioids Anti-Parkinson Antipsychotics Anxiolytics Hypnotics and sedatives Antidepressants	4.4% 2.5% 5.4% 9.8% 8.5% 15.0%	Cardiac glycosides Class IA antiarrhythmics Vasodilators Antihypertensives Diuretics Beta blockers Calcium channel blockers Agents acting on renin-angiotensin system	2.7% 0.0% 2.2% 0.1% 18.0% 8.0% 5.7% 16.0%	Alpha adrenergic antagonists	1.9%
Francis[16]	N/A[b]	N/A		N/A		N/A	
Marvin[19]	65.0%	Not available		Not available		Not available	
Sjöberg[21]	93.0%	Antipsychotics Sedatives Benzodiazepines Antidepressants Urinary spasmolytics Anti-Parkinson Opioids	14.0% 51.0% 31.0% 40.0% 3.0% 1.0% 21.0%	Cardiovascular (overall) Digoxin Nitrates Type IA antiarrhythmics Diuretics Beta blockers Calcium channel blockers ACE inhibitors and ARBs	62.0% 5.0% 11.0% 0.0% 45.0% 39.0% 17.0% 22.0%	Alpha blockers Beta blocker eye drops	5.0% 5.0%

Abbreviations: ACE = angiotensin-converting enzyme; ARB = angiotensin II receptor blocker; CNS = central nervous system; FRID = fall risk increasing drug; N/A = not applicable

[a]Average FRID count per participant reported, rather than percentage of participants on FRID at baseline

[b]This study only included subjects with potentially inappropriate medication use on admission

Supplementary Table S3. Risk of bias in observational studies[a]

	Selection				Comparability	Outcome		
Study	**Representativeness of the exposed cohort**[b]	**Selection of the non exposed cohort**[c]	**Ascertainment of exposure**	**Demonstration that outcome of interest was not present at start of study**	**Comparability of cohorts on the basis of the design or analysis**	**Assessment of outcome**	**Was follow-up long enough for outcomes to occur**[d]	**Adequacy of follow up of cohorts**
Bennett[14]	* Somewhat representative the average older adult admitted to emergency department or hospital for fall in Australia	N/A	* Secure record	N/A	N/A	* Record linkage	No	N/A
Benuza-Sola[15]	* Somewhat representative of the average older adult in Spain admitted to hospital for fall-related fracture	N/A	* Secure record	N/A	N/A	* Record linkage	* Yes	N/A
Francis[16]	* Somewhat representative the average older adult in Canada admitted to hospital for fall	N/A	* Secure record	N/A	N/A	* Record linkage	No	N/A
Hill-Taylor[17]	* Somewhat representative of the average older adult in Canada with hospitalization for fall-related injury	N/A	* Secure record	N/A	N/A	* Record linkage	No	N/A
Kragh[18]	* Truly representative of the average older adult with hip fracture in southern Sweden	N/A	* Secure record	N/A	N/A	* Record linkage	No	N/A

Marvin[19]	* Somewhat representative of the average older adult hospitalized for fall in United Kingdom	N/A	* Secure record	N/A	N/A	* Record linkage	No	N/A
McMahon[20]	* Somewhat representative of the average older adult with emergency department visit for fall in Ireland	N/A	* Secure record	N/A	N/A	* Record linkage	No	N/A
Sjöberg[21]	* Somewhat representative of the average older adult undergoing surgery for hip fracture in Sweden	N/A	* Secure record	N/A	N/A	* Record linkage	* Yes	N/A
Trenaman[22]	* Somewhat representative of the average older adult in Canada with hospitalization for fall-related injury	N/A	* Secure record	N/A	N/A	* Record linkage	No	N/A
Walsh[23]	* Somewhat representative of the average older adult with fall, fracture, or syncope in Ireland	N/A	* Secure record	N/A	N/A	* Record linkage	No	N/A

[a]Risk of bias was measured using the Newcastle-Ottawa scale.
[b] Studies can receive a point for being assessed as truly representative or somewhat representative of the population. We were conservative and rated studies as "somewhat representative" if they did not assess the entire population.
[c] Studies did not include a control group of people without a fall-related injury.
[d]Studies were given a point (star) if the method of outcome assessment was able to capture a change in FRID use at a specific time point following discharge (rather than looking at change in use at discharge or within a period of time following discharge).

Supplementary Table S4. Risk of bias in intervention studies[a]

Study	Random sequence generation	Allocation concealment	Blinding: participants and personnel	Blinding: outcome assessment	Incomplete outcome data	Selective reporting
Blalock[24]	Low	Low	Unclear	Low	High	Low
Boyé[25]	Unclear	Unclear	Unclear	Low	High	Low
Sjöberg[26]	Low	Low	Unclear	Unclear	Unclear	Low
van der Velde[9,b]	High	High	High	Low	Unclear	Low

[a]Risk of bias was measured using the Cochrane Risk of Bias tool.

[b]The study by van der Velde et al. was not a randomized controlled trial, but for consistency, its risk of bias was analyzed using the same Cochrane tool used for the randomized controlled trials.

Supplementary Figure S1. Summary of intervention studies and main results