

HRB Centre for Primary Care Research
Research Briefs

*Potentially inappropriate prescribing
and adverse health outcomes in
older people in primary care*



Older people are particularly vulnerable to adverse effects of medicines because of physiological changes in ageing and increased risk of interactions between multiple drugs or drugs and diseases. Prescribing can be potentially inappropriate if a medication's risks are likely to outweigh its benefits or a better alternative exists. It also relates to omission of appropriate medications recommended for a patient's condition. Potentially inappropriate prescribing can be assessed using the Screening Tool for Older Person's Prescriptions (STOPP) and the Screening Tool to Alert doctors to Right Treatment (START).

Two recent studies from the Health Research Board (HRB) Centre for Primary Care Research (www.hrbcentreprimarycare.ie) have provided evidence that potentially inappropriate prescribing affects the health of older people in primary care.



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Potentially inappropriate prescribing and adverse health outcomes in older people in primary care



The first of these two studies, published in the *Journal of Gerontology* and led by Dr Emma Wallace, included over 900 community-dwelling people aged ≥ 70 years and followed them over a two year period. [1] Participants were interviewed at the end of this period to determine if they had suffered an adverse drug event (ADE) and 74% reported an ADE in the previous six months. The majority of reported adverse drug events were rated as mild. Potentially inappropriate prescribing, measured using STOPP, was identified in 40% of study participants. Individuals with two or more types of potentially inappropriate prescribing were significantly more likely to report an ADE (29% increase in rate), had poorer health related quality of life, and were more likely to visit an Accident and Emergency (A&E) department.

The second study, published in the *British Journal of Clinical Pharmacology* and led by Dr Frank Moriarty, followed approximately 1,700 participants from The Irish Longitudinal Study on Ageing (TILDA) who were GMS (medical card) patients aged ≥ 65 years. [2] Potentially inappropriate prescribing was assessed using data provided by the HSE Primary Care Reimbursement Service on medication dispensing in the 12 months pre-TILDA interview. As in the previous study, individuals with two or more STOPP criteria had higher rates of A&E department visits, as well as GP visits. Omission of recommended medications defined by START was also assessed. Having two or more START criteria was associated with higher rates of A&E department and GP visits, worse quality of life and higher risk of functional decline.

Some of the common types of potentially inappropriate medicine use identified in these studies related to proton pump inhibitors at high dosage for >8 weeks and non-steroidal anti-inflammatory drugs being prescribed long-term or to people with hypertension. The most frequent omissions of potentially beneficial medicines were calcium and vitamin D supplements not currently prescribed in osteoporosis and undertreatment of patients reporting an abnormal heart rhythm.

Given the ageing population and the rise in the number of people living with multiple chronic conditions and taking multiple medications, optimising safe prescribing for older people will be a key challenge for prescribers. These studies illustrate that potentially inappropriate prescribing is associated with poorer health outcomes in older people. This suggests that reviewing medications to reduce potentially inappropriate prescribing may be an effective way to improve health outcomes for older people.

The articles can be viewed at:

[1] Wallace E, McDowell R, Bennett K, Fahey T, Smith SM. Impact of potentially inappropriate prescribing on adverse drug events, health related quality of life and emergency hospital attendance in older people attending general practice: a prospective cohort study. *J Gerontol A Biol Sci Med Sci*. 2016. (www.ncbi.nlm.nih.gov/pubmed/27466245)

[2] Moriarty F, Bennett K, Cahir C, Kenny RA, Fahey T. Potentially inappropriate prescribing according to STOPP and START and adverse outcomes in community-dwelling older people: a prospective cohort study. *Br J Clin Pharmacol*. 2016; 82(3): 849-857. (www.ncbi.nlm.nih.gov/pubmed/27136457)