

# Prevalence and costs of potentially inappropriate medications for elderly people using an automated multidose dispensing service – A nationwide register-based study

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## Objectives

Automated dose dispensing (ADD) is a service aiming to ensure the safe use of medicines, especially in older primary care patients using multiple drugs. Polypharmacy can increase the risk of using potentially inappropriate medications (PIMs), and with PIM use, the potential harms may outweigh the clinical benefits in elderly people. This study aims to evaluate the prevalence and costs of PIM use in elderly people using an ADD service.

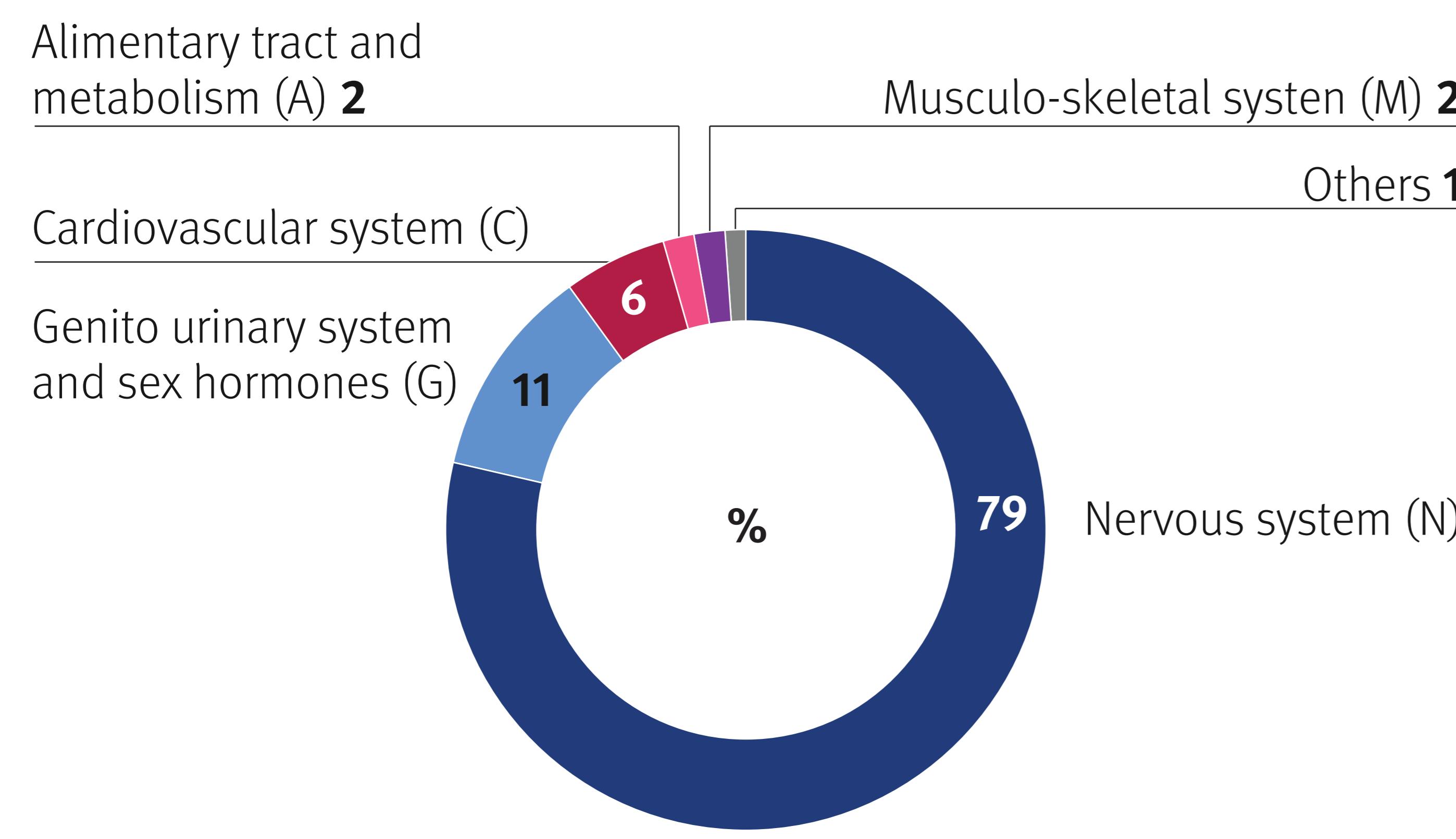
## Methods

The study population includes all individuals aged  $\geq 75$  years with at least one recorded dose-distributed dispensation in 2022. Data on medicine costs and PIMs dispensed through ADD were extracted from the National Prescription Centre of Finland. The control group comprised all people of the same age with no ADD service. PIM use was defined based on the Meds75+ criteria. The costs of PIMs were calculated as total average annual cost per patient. Descriptive analyses were conducted using RStudio.

## Results

The study population included 94,216 ADD users. The prevalence of PIM use was 38% in ADD users and 33% in the control group. In ADD users, the most frequently used PIMs were risperidone (14%) and quetiapine (12%). The average annual cost of PIMs was €103 for ADD users and €73 for the control group.

Figure 1. Distribution of dispensations of potentially inappropriate medicines (PIMs) by ATC main class among elderly people using automated dose dispensing (ADD) service



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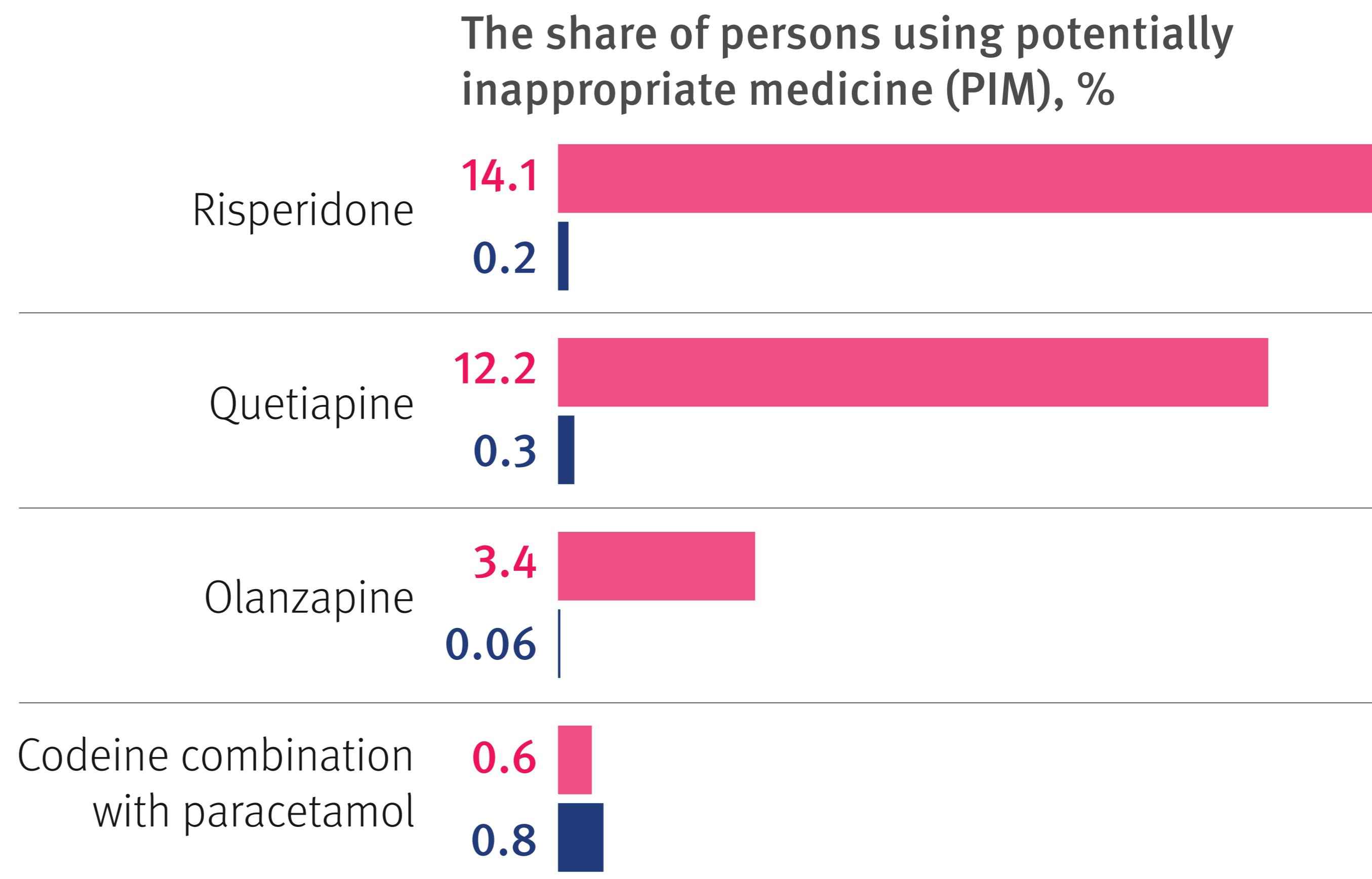


## Conclusion

Our study revealed a high prevalence of PIM use among elderly people using an ADD service. Compared to the control group, the average annual cost of PIMs was higher in ADD users. Healthcare professionals should actively work on identifying PIMs among ADD users in order to decrease the use of high-risk medications and improve medication safety.

Figure 2. Most commonly used potentially inappropriate medicines (PIMs) and the share of elderly people using them

■ ADD users  
■ Control group



## Key findings



**38%**

prevalence of PIM use in ADD users and 33% in control group



**€103**

average annual cost of PIMs for ADD users and €73 for the control group



## Antipsychotics

were most commonly used PIMs among ADD users and opioids in the control group