

# EUTOPIA\_HEALTH Hackathon

## Challenge launched by [Farmácias Holon](#)

### Mission of the company:

Promote health and well-being in the community through community-based care.  
Stand as an approachable and reliable reference for healthcare services.  
Integrate community pharmacy services into sustainable collaborative models.

### Title of the challenge (one sentence only):

How to improve adherence to polypharmacy treatments (generally defined as the use of five or more medications) to reduce disease progression and hospitalizations?

### Brief description of the context/problematic behind the challenge:

Polypharmacy, generally defined as the use of five or more medications, affects more than one-third of the population over the age of 65 in Portugal, and is also becoming increasingly common among younger age groups due to multimorbidity. In the context of high prevalence of chronic diseases, about 40% of patients do not adhere properly to their treatment. Major related to missed doses, duplications, contraindications and severe interactions, resulting in negative outcomes, including disease progression and increased hospitalizations - up to 10% of hospitalizations are related to medication issues. Concurrently, low levels of health literacy affect about half the population and are strongly linked to educational attainment; approximately 39% of adults have completed no more than primary school, and about 38% have not completed secondary school. These factors, often linked to socioeconomic vulnerability, social isolation, and insufficient family support, constitute significant barriers to proper treatment management and adherence to treatment. The use of administration aids - Individualized Medication Preparation (IMP) service, provided by community pharmacies, helps patients manage and adhere to medication.

Compared to some European and International models, pharmaceutical services in Portugal remain underutilized and poorly integrated into the healthcare system, there is limited collaboration between pharmacists and physicians and IMP, despite its potential to improve treatment adherence and reduce medication errors, remains little-known and underused. Data indicate that the public literacy regarding advanced pharmaceutical services is limited, with many patients unaware of its existence, although they report high acceptance and benefit after using it. Among healthcare professionals, including physicians, there is growing recognition of the value of IMP in improving adherence and treatment safety, but barriers persist, such as poor integration with primary care, the absence of structured referral systems, and still-variable knowledge about the service.

Pharmaceutical intervention based on an IMP service can improve adherence to therapy and the identification of drug-related problems, standing the need for greater interdisciplinary coordination and highlighting the potential of this service to optimize health outcomes and reduce costs for the system, representing a critical opportunity to optimize resources by supporting this service through an integrated public-private partnership model.

**Expected results/outcomes:**

Assess the use of healthcare resources - IMP and demonstrate improved treatment adherence (*MPR Medication Possession Ratio*, *PDC - Proportion of Days Covered*) and reduction in hospitalizations and emergency department visits.

Measure clinical outcomes (e.g., disease control); improvements in clinical control (HbA1c, blood pressure), quality of life (*EQ-5D - EuroQol 5-Dimension questionnaire*), and the number of resolved medication-related issues.

Demonstrate cost-effectiveness, highlighting the clinical and economic impact of the service, supporting its potential integration and co-payment by public and private entities.

Propose a sustainable financing model with benefits for patients and the healthcare system and potential for nationwide scalability.

