# Personalised ADR prevention

Translational Pharmacology and Medicines Research Group
IRB CatSud · Tarragona (Spain)

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**Keywords:** adverse drug reactions; drug–drug–gene interactions; polypharmacy; pharmacogenomics; PK/PD and TDM; deprescribing; clinical decision support; real-world data; health economics

**Fields of expertise:** clinical pharmacology and clinical pharmacy; medication safety; medicines policy, HTA and value-based procurement

## Research expertise

We do clinical pharmacy research to make medicines use safer, more effective and more efficient in routine care. The group is the research arm of **Xarxa Santa Tecla**, an integrated health and social care organisation with two hospitals (Hospitla de Sant Pau i Santa Tecla and Hospital del Vendrell) and six primary care centres, and is part of IRB CatSud (formerly IISPV), a CERCA centre with ~300 researchers in 40 groups.

**Group leader:** Dr Josep Maria Guiu Segura, PharmD, PhD, BCOP, BCPS, FFIP; Head of pharmacy services at Xarxa Santa Tecla, Associate Professor at the Clinical Pharmacy and Pharmaceutical Care Unit, Faculty of Pharmacy and Food Sciences, University of Barcelona, in permanent collaboration with the UB Clinical Pharmacy and Pharmacotherapy research group. Leadership roles: Board of Directors, Board of Pharmacy Specialties (BPS); Secretary, FIP Hospital Pharmacy Section; President, Catalan Society of Clinical Pharmacy.

### Research lines

- **Polypharmacy and multimorbidity:** medication review, prescribing cascades, deprescribing.
- **Precision pharmacotherapy:** PGx, PK/PD, TDM and drug–drug–gene interactions.
- **Medication safety:** ADR detection, pharmacovigilance, real-world data, decision support.
- **Medicines value and policy:** HTA, cost-effectiveness, value-based procurement.

## Calls of interest

**HORIZON-HLTH-2027-01-CARE-02** – Personalised approaches to reduce risks from Adverse Drug Reactions due to administration of multiple medications (RIA; €38 M, ~€8–10 M per project; single-stage, deadline 17 February 2027).

## Role in a consortium

**Beneficiary (partner) and Work Package leader.** We would ideally lead the WP on implementation into routine care (training, guidelines and formularies, procurement and reimbursement pathways, regulatory-science dialogue) and act as a clinical site through Xarxa Santa Tecla (hospital, primary and social care). Also open to task leadership in health-economic and ethical-regulatory analysis.

## What we offer

- **Clinical setting and patients.** Access, through Xarxa Santa Tecla's integrated health and social care network (two hospitals and six primary care centres), to multimorbid older adults on three or more concomitant medicines across care levels; sex-disaggregated and population-diverse recruitment; support from the IRB CatSud CEIm, Biobank and new Clinical Research Unit (opening end of 2026).
- **PGx- and PK/PD-guided medication optimisation.** Pragmatic interventions combining structured medication review, pre-emptive pharmacogenomic testing and therapeutic drug monitoring with CPIC/DPWG-based recommendations, deprescribing and adjusted-prescribing algorithms, and detection of prescribing cascades and drug–drug–gene interactions.
- **Decision support and real-world data.** Clinical specification, validation and EHR integration of CDSS/AI alerts for ADR risk, building on Catalonia's integrated digital-health ecosystem (shared health record, universal e-prescription, population-wide real-world data).
- **Clinical utility and cost-effectiveness.** Outcome frameworks (ADR-related admissions, medication burden, patient-reported outcomes), health-economic evaluation and budget-impact modelling of PGx- and biomarker-guided strategies for single drugs and combinations.
- **Implementation, regulatory science and policy.** Translating results into guidelines and formulary, procurement and reimbursement decisions; analysis of ethical, legal (GDPR, EHDS) and organisational barriers; evidence and data-sharing pathways towards EMA and national authorities for deprescribing and adjusted-prescribing guidance.
- **Education and dissemination at scale.** Co-design of training for professionals and patients on polypharmacy, PGx and ADRs, building on university teaching.
- **Complementary IRB CatSud expertise.** Synergies with institute groups on drug classes and exposures named in the call: cardiovascular drug-response variability (cardiology), oncology (OECI-accredited Catalunya Sud Cancer Center), psychiatric genetics (Institut Pere Mata), nutrition (drug–food interactions) and environmental health (PARC partnership) for pharmaco-exposomics; biobank, omics and biostatistics platforms.

## Other useful information

- IRB CatSud's International Projects Unit (UPI) provides pre- and post-award support; the institute holds the HR Excellence in Research award and co-leads a work package in the Horizon Europe PARC partnership.
- Experience in co-creation with patient associations (e.g., the Cancer League of Tarragona and Terres de l'Ebre) for patient-facing materials and engagement.
- Available for consortium-building calls and to co-write the clinical-study, health-economics, implementation and dissemination sections before the 17 February 2027 deadline.