Real-World Effectiveness in Hypertension and Hyperlipidemia Collaborative Management between Pharmacies and Primary Care in Portugal: A Multicenter Quasi-Experimental Pragmatic Controlled Trial (USFarmácia®)

**Introduction**

There is evidence of the efficacy of certain public health services provided by pharmacists in appropriate collaborative environments with physicians, but little is known about the effectiveness of such interventions in real-world trials.

**Aims**

To assess the effectiveness and discuss the design and challenges of hypertension and hyperlipidemia management between pharmacies and a National Health Service (NHS) and primary care family health unit (USF) in Portugal using decision algorithms; data exchange between providers, refill SMS reminders to patients, and experimental bundled payment.

**Methods**

Multicenter, pragmatic, quasi-experimental controlled trial.

The collaborative intervention package is detailed in Fig. 1. We developed two choice options for the patient to consent to the exchange of relevant health data from/to pharmacists to/from physicians/nurses which were added to the Consent Form of the NHS Patient Electronic Health Record RSE® for the first time in Portugal (Fig. 2).

We collected patient-level data from primary care prescription claims BDN® and Electronic Medical Record SClinico® databases, pharmacy claims Sifarma® database, and patient telephone surveys at several time points. Primary outcomes: changes in blood pressure (BP) and total cholesterol.

We used matched controls with 1) Difference-in-difference estimators in a GLM at 6 months; 2) Controlled interrupted time series (CITS) 6 months before/after the intervention. We collected additional data for economic and qualitative studies.

**Trial registration:** Current Controlled Trials: ISRCTN13410498, retrospectively registered on 12-12-2018: https://www.isrctn.com/ISRCTN13410498.

**Results**

A total of 5 best-match control USFs and 13 control pharmacies (control). A total of 203 patients entered the study and were included in the baseline analysis. We included 107/114 patients for the 6-month prior/after recruitment analysis.

We experienced challenges during the trial that required creative strategies in real-time, e.g., adjustments in Feedback Reports to each Pharmacy (Fig. 4).

After adjusting for covariates in GLM, we were not able to observe significant differences in the effect of the intervention vs control. When using CITS, the trend effect in systolic BP change, although negative, is not significant either (Fig. 5).

**Conclusion**

This trial was not able to show effectiveness likely due to the limitations of primary care technology. It offers valuable lessons on methods, strategies, and real-world evidence from various data sources. It paves the way for future real-world trials to mirror more realistic settings, advance integrated care between pharmacies and primary care, achieve appropriate use of medicines, and improve patient outcomes.

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You are also welcome to check our POSTERS EE358 (cost-effectiveness and cost-utility) and PCR290 (preferences and cost-benefit of this trial).

**References**