Trial Title: Personalise antidepressant treatment for unipolar depression combining individual choices, risks and big data (PETRUSHKA)

Ethics Ref: 22/SC/0240

IRAS Project ID: 286484

End of Trial Report: Lay Summary

The PETRUSHKA trial tested whether an AI driven digital tool could personalise antidepressant treatment for people with depression and improve depressive and anxiety symptoms.

Choosing an antidepressant treatment is often a trial-and-error process and many people stop their treatment early because of side effects or because they do not feel better.

The aim of the PETRUSHKA trial was to support clinicians and patients to choose the antidepressant that is better tailored to each individual. The PETRUSHKA tool used AI and advanced statistics to combine information from each participant, such as their age, gender and symptom severity, and their preferences about side effects.

Trial participants were randomly allocated to either the PETRUSHKA tool or standard care (i.e. clinician's decision) to guide the treatment selection. The tool was tested in GP practices and mental health clinics in the UK as well as in Brazil and Canada.

The results of the trial show that the participants whose antidepressant was selected using the PETRUSHKA tool were around 40% more likely to continue their antidepressant after two months of treatment. Fewer people in this group stopped treatment because of side effects. By six months the PETRUSHKA group also reported greater improvements in depressive and anxiety symptoms, and wellbeing.

The study shows that digital, patient-centred decision-support tools can personalise antidepressant treatment in mental health care using routinely collected information. Through shared decision-making and taking participant preferences into account, the PETRUSHKA tool improved participants' outcomes and their overall experience with antidepressant treatment.