Choice experiment modelling is based on random utility theory (RUT) which assumes that the utility (U) for individual i conditional on choice j consists of an explainable component (Vij) and a random component (eij) (formula 1). The random component may capture any combination of unobserved attributes, unobserved preference variation, specification error, measurement error and inherent variability within and between individuals (37).

1. *Uij =Vij + eij*

For this analysis we applied dummy coding and created an alternative specific constant to represent the opt-out choice scenario (38, 39). For main effects we conducted mixed logit regression models to account for preference heterogeneity with all attributes included as random parameters and the opt-out ASC included as a fixed parameter. The explainable component (Vij) for this experiment is denoted in formula 2 below, where b1-15 represents the coefficient for the corresponding attribute level and bo represents the utility associated with the ASC. The baseline attribute category for each attribute is omitted from formulae and estimations, as this attribute has by definition a utility of 0 when dummy coding is used.

1. *Vij = bo +b1 waiting time: 1hr + b2 waiting time: 2hrs + b3 scheduling: phone + b4 scheduling: drop-in + b5 frequency: annual + b6 enforcement: air travel + b7 enforcement: work/school +b8 enforcement: recreation + b9 community vaccinated: few + b10 community vaccinated: most + b11 dosage: two + b12 location: pharmacy + b13 location: community pop-up + b14 location: home + b15 location: mass site*

In this analysis the utility for the ASC includes the utility for the opt-out choice, inattention, experiment complexity and is confounded by the utility estimates for the baseline levels of attributes, bo can therefore not be directly interpreted from model outputs. For this choice experiment our interest was relative utilities and no estimation of preference shares or probability of uptake, we therefore used dummy coded datasets in estimations (40). Mixed logit models were fit using Stata’s mixlogit command which uses simulated maximum likelihood estimators and generates mean utilities for the population and standard deviations of the random coefficients (41).