Methods 11 focus groups with the public (n=36), and those recently diagnosed with an STI (n =20), explored perceived barriers and facilitators to using prototype self-sampling packs and returning samples. Using the behaviour change wheel approach to direct intervention development, we engineered an optimised self-sampling and treatment pack and instructions, supported by audio-visual online materials. In this way we translated lay perspectives into evidence-based and theoretically informed, pragmatic recommendations.

Results Using rich participant extracts we illustrate how our analysis suggests: the design of the package should physically separate and order components to be used at each stage in the self-sampling/treatment process; simple written and online audio-visual instructions, suitable for those with low literacy levels should be provided; the rationale for and health consequences of not testing for STIs, including HIV, should be clearly articulated, enabling users to opt-out of HIV testing without inadvertently opting-out of STI testing; specific information concerning the viability of both self-taken samples and postal delivery to laboratories is needed.

Conclusion This study represents the first evidence-based approach to improving the design of self-sampling packs and sample return. Using qualitative approaches and implementation science it is possible to systematically suggest refinements to product design and the need for additional sources of psychological and behavioural support to improve user experience, increase acceptability of self-sampling, broaden uptake and boost sample return.

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