

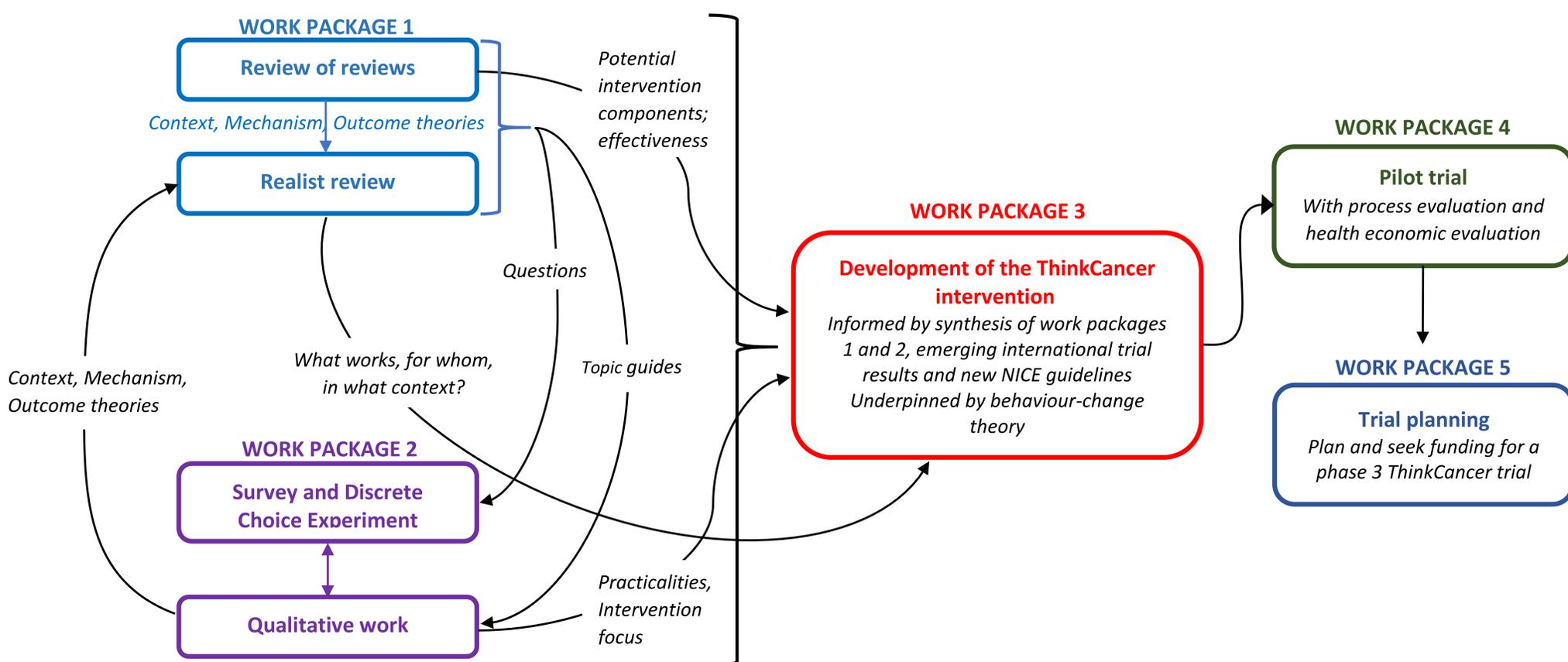
Wales Interventions and Cancer Knowledge about Early Diagnosis (WICKED);

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Background: Wales, like other UK countries, has relatively poor cancer outcomes and late diagnosis is a major contributor. This research programme concentrates on the primary care interval: the time between presentation of symptoms by patients and referral. We aim to synthesise current evidence, gather new empirical evidence, and develop and evaluate a complex intervention to change primary health care professionals' knowledge, attitudes and clinical behaviour, with the intention of reducing primary care intervals and improving cancer outcomes.

Design: The programme is divided into five Work Packages (WPs). The programme is heavily grounded within the MRC Framework for the development and evaluation of complex interventions and underpinned by behaviour change theory (*Michie, Atkins and West, 2014). All of the work will be conducted in Wales, but will have implications for the UK and beyond. The interconnection of the Work Packages is demonstrated in the Figure.



WP1 – Systematic review of reviews and realist review

We have conducted a review of reviews to identify candidate behaviours based on the Behaviour Change Wheel. Through the application of a 6-step behaviour-change intervention design process, we will develop a short-list of intervention components that are feasible to implement and address the most important modifiable behaviours. We will next conduct a realist synthesis to test programme theories relating to the short-list and determine the contexts in which they are most likely to work.

WP2 - Survey, Discrete Choice Experiment, and qualitative studies

An online survey and discrete choice experiment will explore GPs' views and preferences regarding the means of earlier diagnosis of cancer in primary care. We will use qualitative methods to obtain an in-depth understanding of personal beliefs and behaviour (interviews with GPs) and practice team systems and norms (practice-based focus groups). Both datasets will be analysed thematically using the COM-B model and Theoretical Domains Framework elements of the Behaviour Change Wheel.

WPs 3-5 - Development of interventions; Randomised external pilot trial with embedded pilot cost-effectiveness analysis; Phase III trial planning

The findings from WP1&2 will be integrated, and the components for a ThinkCancer! intervention will be selected, refined and tested in a pilot pilot trial in preparation for the development of a Phase III trial.

Work Package 1: Review of reviews

Early findings: key candidate behaviours for intervention

Some cancers are extremely difficult to diagnose, presenting with common symptoms of benign disease. However, the review indicated some evidence of:

- Some patient groups including younger and female patients experiencing longer times to referral
- Limited knowledge, or failure to recognise some signs and symptoms
- Failure to perform tests and examinations, especially rectal examination
- Reluctance to test for cancer when the risk is low
- Failure to follow up unresolved symptoms, especially after negative or false-negative test results
- Under-use of the 2-week wait rule
- Variation in the use of cancer diagnostics (CT, ultrasound, endoscopy)
- Lack of continuity of care; but also barriers to obtaining a second opinion
- Concern not to over-investigate/over-refer

*The behaviour change elements of this programme of work are based on the body of behaviour change literature by Susan Michie et al., including The Behaviour Change Wheel: a guide to designing interventions; Susan Michie, Lou Atkins and Robert West, 2014, Silverback Publishing, UK.