WHAT IF scheduling domiciliary care could be easier and better matched to the needs of people living with dementia?

Personalising Domiciliary Dementia Care via Co-Designed Computational Matching: A Study Protocol

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PERSONALISING DOMICILIARY DEMENTIA CARE

WHAT is this project about?

The aim of this project is to improve dementia care in the home by designing a digital platform that:

- Matches the preferences of people living with dementia, their family/friend supporters and care workers
- Enables 'live', needs-informed rostering (the process of creating schedules for care workers and clients)

WHY is this project needed?

It is the desire of the majority of people living with dementia (PLwD) to remain living in their own homes. This desire is reflected in UK policy directives, stating that PLwD should be supported to remain living in their own homes (Department of Health, 2009).

Supporting a PLwD in their own home can be challenging for care partners. Family/friend carers have been shown to have high levels of care related of stress, depression, and anxiety (Lindeza et al, 2020).
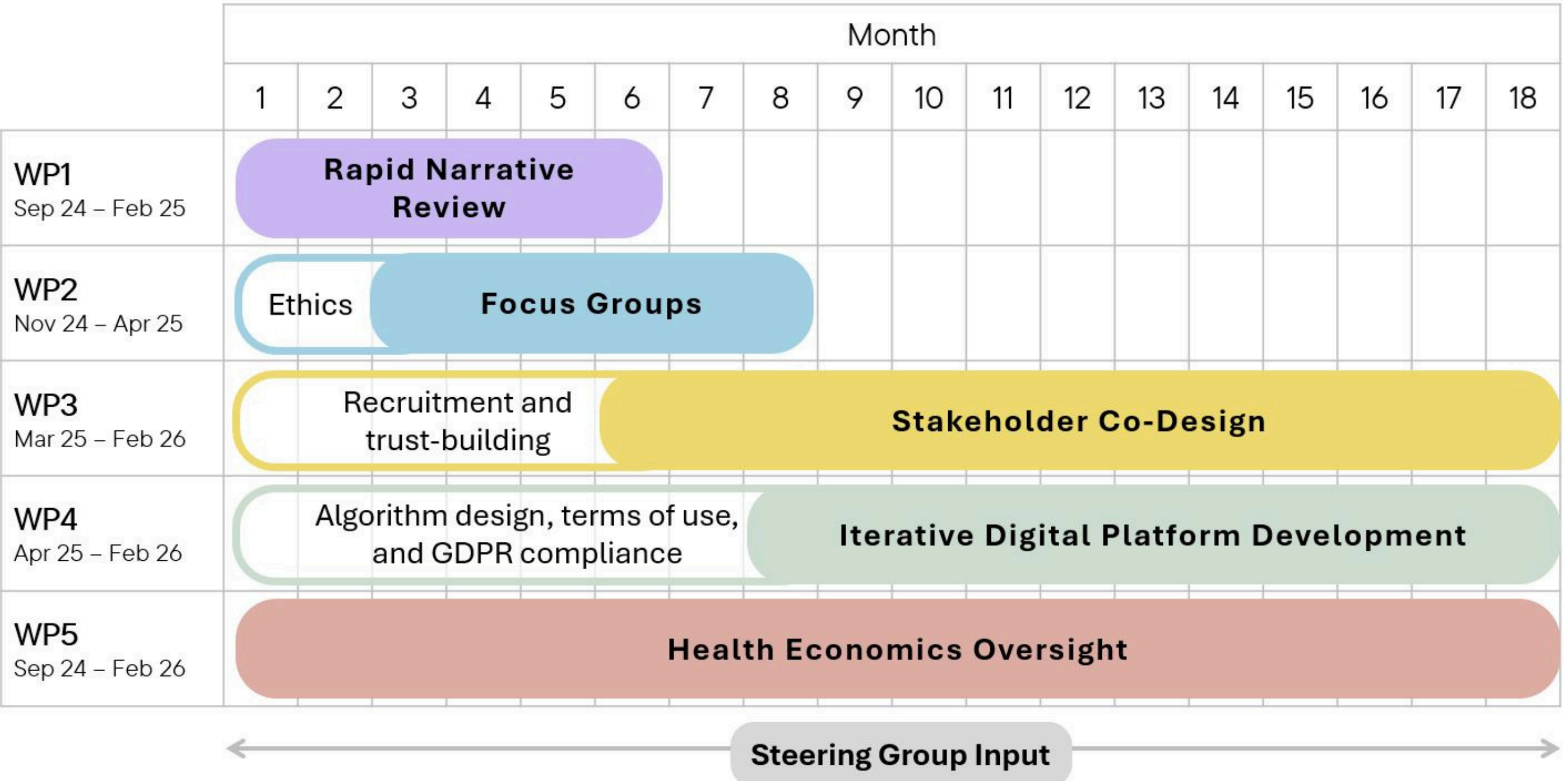
Providing care for people living with dementia at home can be challenging due to high levels of stress, burnout, and frequent staff changes among domiciliary care workers (Fleming & Taylor, 2007). Retention in the home care sector remains a challenge for employers, with average turnover rates of 32.6% (Low Pay Comission, 2012). Issues related to poor staff outcomes include: lone homecare workers, varied hours, complex work, poor integration across health and social care services, funding, and poor levels of pay (Skills for Care, 2014).

Domiciliary carers have been shown to have more job satisfaction and better outcomes when they have a sense of flexibility within their working lives, and a knowledge that their care was having a positive impact on the lives of PLwD (Donnellan et al, 2022).

Research shows that matching care worker skills and characteristics to the specific needs and preferences of people living with dementia and their families/friends can improve care (Dawson et al, 2015).
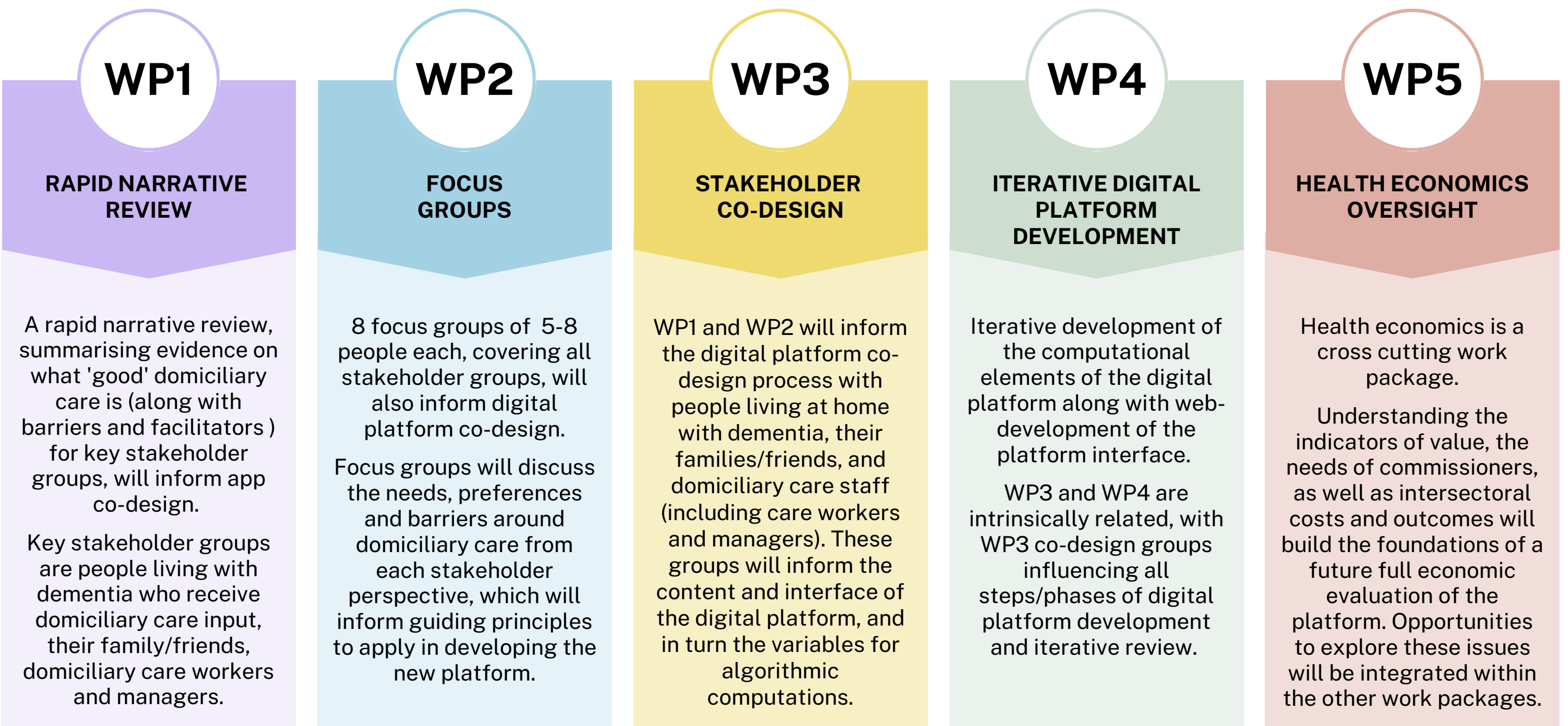
WHEN will we carry out the project?

The project has started in September 2024 and will carry on for 18 months.

	Month																	
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
WP1 Sep 24 – Feb 25	Rapid Narrative Review																	
WP2 Nov 24 – Apr 25	Ethics		Focus Groups															
WP3 Mar 25 – Feb 26	Recruitment and trust-building					Stakeholder Co-Design												
WP4 Apr 25 – Feb 26	Algorithm design, terms of use, and GDPR compliance				Iterative Digital Platform Development													
WP5 Sep 24 – Feb 26	Health Economics Oversight																	

Steering Group Input

HOW will we carry out the project?

There are a number of steps that we need to complete to develop a prototype of the digital platform; we have divided them into work packages.

WP1 — RAPID NARRATIVE REVIEW

A rapid narrative review, summarising evidence on what 'good' domiciliary care is (along with barriers and facilitators) for key stakeholder groups, will inform app co-design.

Key stakeholder groups are people living with dementia who receive domiciliary care input, their family/friends, domiciliary care workers and managers.

WP2 — FOCUS GROUPS

8 focus groups of 5-8 people each, covering all stakeholder groups, will also inform digital platform co-design.

Focus groups will discuss the needs, preferences and barriers around domiciliary care from each stakeholder perspective, which will inform guiding principles to apply in developing the new platform.

WP3 — STAKEHOLDER CO-DESIGN

WP1 and WP2 will inform the digital platform co-design process with people living at home with dementia, their families/friends, and domiciliary care staff (including care workers and managers). These groups will inform the content and interface of the digital platform, and in turn the variables for algorithmic computations.

WP4 — ITERATIVE DIGITAL PLATFORM DEVELOPMENT

Iterative development of the computational elements of the digital platform along with web-development of the platform interface.

WP3 and WP4 are intrinsically related, with WP3 co-design groups influencing all steps/phases of digital platform development and iterative review.

WP5 — HEALTH ECONOMICS OVERSIGHT

Health economics is a cross cutting work package.

Understanding the indicators of value, the needs of commissioners, as well as intersectoral costs and outcomes will build the foundations of a future full economic evaluation of the platform. Opportunities to explore these issues will be integrated within the other work packages.

WHO is working on the project?

The core team members are listed below. We will soon have research assistants and interns working on the project, as well as external software engineers. We will not be developing this new matching platform on our own. Co-design groups of people living with dementia, carers/supporters of people with dementia, frontline domiciliary care workers and domiciliary care managers will define what the platform does and what it looks like. We will also be supported by a project steering group, consisting of individuals from the above groups, as well as wider stakeholders.

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WHAT will be the end result?

At the end of the project we will have a co-designed prototype of a new digital platform. We will then seek further funding to test the prototype out with domiciliary care agencies and research if/how the new platform benefits people living with dementia, their families/friends, and care workers.