

# Early Intervention and Prevention of Traumatic Stress Among First Responders and Health Care Workers:

## A Co-Created Digital Intervention (Sentinel) and Non-Randomised Pilot Trial



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### 1 BACKGROUND

First responders (paramedics, fire and emergency workers, police, and medical emergency workers) are at high risk of being exposed to traumatic events in their occupational roles. Responding to critical incidents often involves exposure to life-threatening circumstances, dealing with fatalities, as well as encountering highly stressful situations that may trigger traumatic responses. There is a need for evidence-based support for first responders and healthcare workers who have been exposed to trauma in their working roles.

### 3 INTERVENTION

Sentinel is a cross-platform, personalised, digital intervention that aims to incorporate activities such as breathing work, yoga exercises, mindfulness, psychological safety, and body awareness (see Table 1), which are delivered to users according to scheduled notifications that are tailored to each user depending on their persona type and interactions with the intervention (see Figure 1). This includes progress updates as well as insights and custom content.

Figure 1

The "personas" allow Sentinel to decide what intervention modules to give to users, and when, depending on their experience of traumatic stress and other core presenting problems (comorbid anxiety and/or depressive symptoms).

### 5 RESULTS

We expect trial data testing the intervention to be collected from up to 50 first responders and healthcare workers. We expect to conduct approximately 30 follow-up qualitative interviews with participants and 20 health and social care professionals who referred participants to the study.

### 6 CONCLUSION

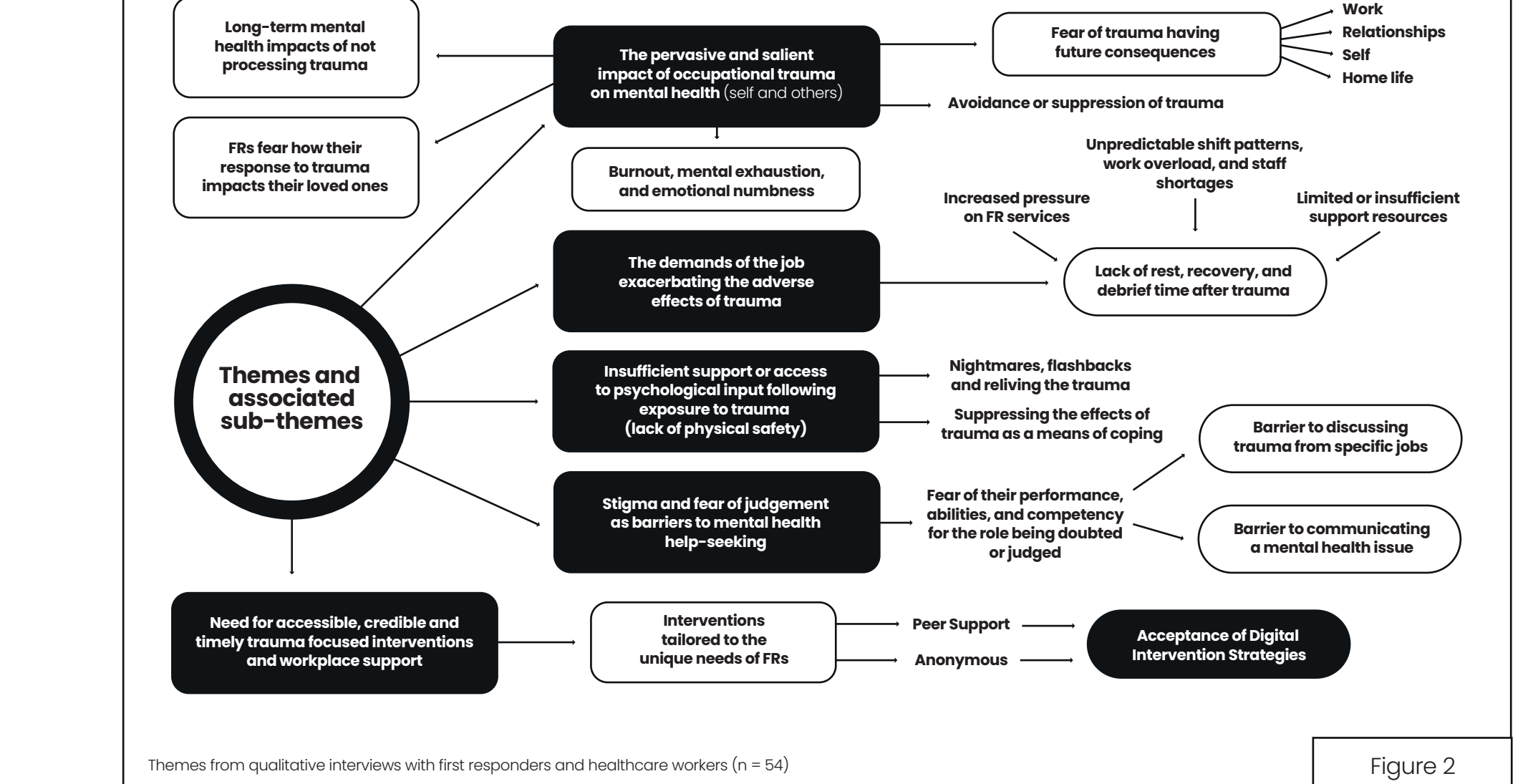
This study will provide preliminary evidence on the feasibility of recruiting first responders and healthcare workers to a trial of this nature and on the acceptability, safety, and usability of the Sentinel intervention. Barriers and facilitators to the future integration of the intervention into existing care pathways, including traditional clinic-based NHS and e-therapy providers, will be identified. The findings will inform the decision to proceed with a powered efficacy trial and future innovations in artificial intelligence powering components of the intervention.

CATEGORY	Modules	CATEGORY	Modules
Increasing Knowledge of Trauma and Traumatic Stress	3	Improving Social Connectedness	1
Increasing Knowledge of Post-Traumatic Growth	2	Increasing Levels of Physical Activity	4
Increasing Mind-Body and Emotional State Awareness	12	Reducing Levels of Sedentary Behaviour	5
Learning Strategies to Cope with Present Distress	15	Increasing Resilience	1
Improving General Mood and Affect	10	Spirituality and Religious Healing	1
Improving Sleep	5		

Table 1

### 2 OBJECTIVE

We co-created a digital intervention (Sentinel) aimed at improving mental wellbeing and providing early intervention for exposure to workplace trauma that may reduce the risk of poor mental health outcomes such as the onset of post-traumatic stress disorder (PTSD). Evidence-based content generation (see Figure 1) is complete and informed by in-depth interviews (n = 54) with first responders and healthcare workers (see Figure 2). We have developed a research trial to test the acceptability, safety, and usability of the digital intervention, and we aim to explore how to best integrate Sentinel into existing routine care pathways.



### 4 METHODS

This is a mixed-methods, non-randomised study aimed at testing the Sentinel intervention. Participants aged 18 years and older who report distress associated exposure to work-related trauma(s) will be recruited from the National Health Service (NHS) in the UK and first responder organisations. All participants will receive the Sentinel app for 6 weeks. Sentinel is designed to be used in a stand-alone manner alongside routine care. We will follow participants up after the intervention and conduct interviews with stakeholders to explore the acceptability of Sentinel and trial procedures and identify areas for improvement.

**"I've got no PPE to protect my mind"**

(John, Paramedic)



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