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ARTICLE

Interventions Targeting Practice Change Among Healthcare Providers: An Implementation Science Starter Kit

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Abstract

Promoting behaviour change among healthcare providers (HCPs) is crucial for addressing evidence-to-practice gaps in clinical settings. The field of implementation science offers systematic, theory-informed approaches to promote the timely adoption, integration, and sustainment of evidence-based interventions to improve patient care. In this 'starter kit', we provide a summary of core concepts from implementation science and highlight its complementarity with health psychology. We then introduce a range of commonly used theories, models, and frameworks that help specify HCP behaviour, identify determinants of HCP behaviour in complex clinical settings, and develop interventions to support implementation efforts. Finally, we offer practical guidance for health psychology scholars on how to apply these concepts and methods to support the development, evaluation, and implementation of interventions targeting practice change among HCPs. We believe that fostering opportunities for mutual learning and collaboration across disciplines is vital to ensure that HCPs and other key interest holders, such as policymakers and health system leaders, are supported in delivering high-quality, evidence-based care.

Key words: Implementation Science, Health Psychology, Healthcare Provider Behaviour, Practice Change Interventions

Introduction

There are well-documented gaps between the evidence generated through research and the practices routinely delivered in clinical settings. These 'evidence-to-practice gaps' or 'know-do gaps' contribute to variability in care quality, poorer patient outcomes, and inefficiencies within health systems (Balas and Boren, 2000; Morris et al., 2011). Examples include inappropriate prescribing of medications (Hulscher et al., 2010), unnecessary test ordering in hospitals (Brownlee et al., 2017), and low physician referral rates to prevention services (Jackson et al., 2004). For health psychologists working in clinical settings, these gaps represent missed opportunities to implement evidence-based behavioural and psychological interventions with the potential to improve patient care (e.g., patients with long-term conditions [LTCs] not receiving structured psychosocial support from a health psychologist despite local recommendations).

Closing evidence-to-practice gaps requires not just generating knowledge (e.g., randomized trials, systematic reviews, clinical guidelines) but also systematically applying and sustaining that knowledge into practice and policy (Graham et al., 2006). Implementation science is an interdisciplinary field offering a structured approach to closing evidence-to-practice gaps by focusing on the adoption, integration, and sustainment of evidence-based practices by healthcare providers (HCPs), as well as by other key interest holders such as policymakers, administrators, and organizational leaders (Nilsen and Birken, 2020). It offers systematic approaches to support the identification of barriers and enablers to the uptake of recommended clinical practices/interventions, promote the abandonment of ineffective or suboptimal practices, and support the sustainment of changes in practice over time (Nilsen, 2015; Proctor et al., 2010). Unlike traditional health behaviour change approaches that primarily target patients or the public, implementation science shifts the focus to HCPs and other change agents; whose behaviours are critical for ensuring the delivery of evidence-based care (Grol and Wensing, 2004).

The integration of health psychology and implementation science offers a powerful opportunity to enhance the design, delivery, and evaluation of interventions targeting HCP practice change in line with the latest evidence. Health psychology provides well-established theories of behaviour change, while implementation science offers evidence-informed strategies to address the multi-level determinants influencing behaviour within complex clinical environments (Damschroder et al., 2009; Michie et al., 2011). Together, these disciplines enable a systematic, theory-informed approach to improving clinical practice and patient outcomes. Despite these complementarities, the uptake of implementation science frameworks within health psychology research and practice has been limited (Atkins et al., 2017); thus, a tailored 'starter kit' that bridges these disciplines could support broader uptake and application. The purpose of this starter kit is therefore to introduce those working in health psychology settings to key concepts, frameworks, and tools from implementation science and demonstrate how this field complements much of the thinking within the discipline of health psychology. Specifically, the starter kit will:

1. Define core concepts from implementation science.

2. Outline key theories, models, and frameworks from implementation science that support the systematic development of practice change interventions.

3. Provide practical, step-by-step guidance to help health psychology scholars design, evaluate, and implement practice change interventions.

Section 1. Core concepts from implementation science

Implementation is not a single event but an iterative, multi-step process that involves integrating evidence-based practices into healthcare settings (Nilsen, 2015). This may include adopting new interventions, modifying existing workflows, and ensuring that changes are maintained over time. Implementation efforts must account for dynamic features of healthcare contexts such as resource constraints, provider attitudes, and organisational readiness which can curtail the uptake of evidence-based practices (Grol and Wensing, 2004). For example, introducing structured psychosocial support for patients with LTCs likely requires that health psychologists have adequate time, training, and organisational support to deliver these interventions effectively.

Health psychologists working in clinical settings frequently engage in efforts to change how HCPs deliver evidence-based interventions. In such contexts, practice change can occur in many forms. Table 1 provides a concise summary of the core concepts of implementation, de-implementation, substitution, sustainment, scale-up, and spread. Distinguishing these core concepts is crucial for tailoring implementation strategies. For example, scaling an intervention within a health system typically involves building on existing infrastructure and maintaining fidelity to core intervention components while increasing its reach across settings or populations. In contrast, spreading an intervention to entirely new contexts often necessitates adaptation of the intervention to fit different contexts, organizational settings, and populations whilst maintaining intervention fidelity.

Table 1

Summary of core concepts from implementation science as applied to practice change.

Technical Term	Lay Term	Definition	Example
Implementation	Start something new	The process of integrating an evidence-based practice into routine clinical care to improve patient outcomes.1	A hospital introduces a structured depression screening protocol to ensure early identification and treatment.
De-implementation	Do less of something already in practice or stop something entirely	Reducing or eliminating clinical practices that are ineffective, unnecessary, or potentially harmful.2	A healthcare system phases out routine use of antibiotics for viral infections to reduce antimicrobial resistance.
Substitution	Replace an existing approach with something new	Replacing a current practice with a different, more effective alternative.2	A clinic replaces handwritten medication orders with an electronic prescribing system to reduce prescription errors.
Sustainment	Continue the different approach over time	Maintaining an evidence-based intervention over time to ensure its ongoing integration into practice.3	A hospital ensures continued use of a sepsis early-warning system by embedding it into routine training and performance reviews.
Scale-Up	Do more of something already in practice	Expanding an existing intervention within the same system by increasing its coverage, intensity, or reach while maintaining fidelity.4	A successful nurse-led smoking cessation program in one hospital unit is expanded to all inpatient units across the hospital.
Spread	Introduce to new contexts or settings	Transferring an intervention to a new setting, population, or system beyond the original implementation context.4	A mental health support program initially developed for primary care is adapted and introduced in community pharmacies.

Notes. 1 Graham et al., (2006); 2 Patey et al., (2018); 3 Scheirer & Dearing (2011); 4 Sun et al., (2024)

Section 2. Theories, models, and frameworks from implementation science

The development and implementation of behaviour change interventions to promote the uptake and sustainment of evidence-based clinical practices requires a systematic, theory-informed approach. As an example, French and colleagues (2012) outline a four-stage process for implementing evidence into practice, including: (1) identifying 'who needs to do what differently', (2) identifying

determinants of behaviour change (i.e., barriers to and enablers of change), (3) selecting implementation strategies to address these determinants, and (4) evaluating the outcomes of the implementation effort. There are numerous other theories, models, and frameworks (TMFs) available to guide implementation efforts, each with distinct purposes, structures, and levels of abstraction (Nilsen, 2015). In this starter kit, we present a curated selection based on their empirical support, relevance to clinical settings, and frequency of use in implementation science research (Birken et al., 2018). Many of these TMFs are grounded in theories from psychological and behavioural science, reflecting their relevance for understanding and influencing HCP behaviour and broader implementation processes. Our intent was not to provide an exhaustive list but rather to highlight several TMFs that are widely recognized, commonly applied, and offer practical utility for those new to implementation science. Resources such as T-CaST, an implementation theory comparison and selection tool (Birken et al., 2018), can assist researchers in choosing TMFs suited to the specific aims, settings, and contexts of their implementation projects.

Section 3. Practical, step-by-step guide for developing practice change interventions

The previous sections of this starter kit have outlined core concepts from implementation science and introduced several useful frameworks to support implementation. This section offers a guide for applying those concepts, structured around six key steps involved in designing and evaluating interventions to change HCP behaviour.

The six steps presented here were developed based on the four-stage process described by French et al. (2012) (see Section 2) and further informed by widely cited guidance from implementation science (e.g., Damschroder et al., 2009; Powell et al., 2015a; Proctor et al., 2010). The steps map onto the key stages of implementation - defining the desired change, identifying barriers and enablers, selecting appropriate strategies, and preparing for evaluation - and aim to translate theoretical principles into actionable guidance for those working in applied health psychology settings.

Table 2 presents examples of TMFs that may support implementation efforts across different stages, particularly those relevant to the kinds of challenges commonly encountered in health psychology. While not exhaustive, the examples demonstrate how TMFs can support thinking at each stage of the process. The six-step guide that follows builds on this by offering a process-oriented structure for applying such tools in practice. Steps 1–3 align with French et al.'s (2012) first three stages of intervention development - identifying who needs to do what differently, identifying determinants of behaviour change, and selecting appropriate implementation strategies - while Steps 4–6 correspond to planning, preparing, and evaluating implementation efforts. Together, these steps provide an operational framework to support systematic, evidence-informed practice change initiatives. We illustrate each step using an example drawn from smoking cessation interventions, a domain with strong foundations in both health psychology and implementation science.

Table 2

Summary of the key stages involved in an implementation project along with several theories, models, and frameworks to consider.

Implementation Stage1	Theory/Model/ Framework	Description	Examples
(1) Identifying 'who needs to do what differently'	Action, Actor, Context, Target, Time (AACTT) Framework1	The AACTT framework provides a structured approach to defining behaviour change by specifying key components ('who needs to do what differently, where and when').	Identifying that nurses (actor) need to conduct post-discharge medication counselling (action) for heart failure patients (target) during follow-up visits (context/time) to improve adherence.
(2) Identifying determinants of behaviour change (i.e., barriers to and enablers of change)	Theoretical Domains Framework (TDF)2,3,4	The TDF identifies psychological, social, and environmental determinants of behaviour that influence implementation.	Identifying that a lack of confidence (beliefs about capabilities) and fear of negative patient reactions (social influences) are barriers preventing nurses from discussing deprescribing with older adults.
	Consolidated Framework for Implementation Research (CFIR)5,6	The CFIR examines multi-level influences, including inner and outer setting factors that impact implementation.	Assessing that a lack of leadership support (inner setting) and inconsistent funding for training programs (outer setting) hinder the integration of a new chronic disease management protocol.
	Capability, Opportunity, Motivation-Behaviour (COM-B) Model7	The COM-B model explains behaviour change as a function of capability (physical and psychological), opportunity (social and environmental), and motivation.	Determining that physicians lack awareness of new deprescribing guidelines (capability) and do not have system prompts in electronic records (opportunity) to support implementation.

Implementation Stage1	Theory/Model/ Framework	Description	Examples
(3) Selecting implementation strategies to address these determinants	Expert Recommendations for Implementing Change (ERIC) Taxonomy8	The ERIC taxonomy comprised a list of implementation strategies, such as training, support, and monitoring approaches.	Using reminders (remind clinicians) and academic detailing (conduct educational outreach visits) to improve HCP adherence to new opioid prescribing guidelines.
	Effective Practice and Organization of Care (EPOC) Taxonomy9	The EPOC taxonomy classifies implementation strategies into professional, organisational, financial, and regulatory interventions.	Introducing a financial incentive program (financial intervention) to encourage clinics to implement smoking cessation counselling into standard practice.
	Behaviour Change Techniques (BCTs) Taxonomy10,11	The BCT taxonomy offers a standardised approach for identifying and describing the 'active ingredients' within behaviour change interventions.	Using 'goal setting' and 'action planning' BCTs to encourage HCPs to routinely discuss deprescribing with older patients during medication reviews.
	Affordability, Practicability, Effectiveness, Acceptability, Side-effects, Equity (APEASE) Criteria 12	The APEASE criteria assesses whether implementation strategies are affordable, practical, effective, acceptable, safe, and equitable.	Using the APEASE criteria to determine whether integrating a pharmacist-led medication adherence service into routine primary care is feasible and cost-effective.
(4) Evaluating the outcomes of the implementation effort	Theoretical Framework of Acceptability (TFA)13	The TFA evaluates the acceptability of interventions from the perspective of those delivering and receiving them.	Assessing whether physicians find it acceptable to use motivational interviewing during smoking cessation counselling.
	Normalization Process Theory (NPT)14	The NPT explains how new interventions become embedded in practice through coherence, cognitive participation, collective action, and reflexive monitoring.	Evaluating whether shared decision-making tools for chronic pain management become a routine part of clinical practice.
	Reach, Effectiveness, Adoption, Implementation, and Maintenance (RE-AIM) Framework15	The RE-AIM framework evaluates the impact of interventions by measuring Reach (who is affected), Effectiveness (impact on outcomes), Adoption (uptake by settings and staff), Implementation (consistency and fidelity), and Maintenance (long-term sustainability).	Assessing the long-term adoption and effectiveness of a digital reminder system for medication adherence in primary care.

Notes. 1 Presseau et al., (2019); 2 Atkins et al., (2017); 3 Cane et al., (2012); 4 Michie et al., (2005); 5 Damschroder et al., (2009); 6 Damschroder et al., (2022); 7 Michie et al., (2011); 8 Powell et al., (2015b); 9 Mowatt et al., (2001); 10 Marques et al., (2023); 11 Michie et al., (2013); 12 Atkins (2015); 13 Sekhon et al., (2017); 14 May et al. (2009); 15 Glasgow et al., (2001a).

Step 1: Define the Practice Change

Successful implementation begins with clearly defined aims for practice change ('who needs to do what differently, where and when'), ensuring alignment between the target behaviour, key interest holders, and the clinical setting (French et al., 2012; Graham et al., 2006; Presseau et al., 2019; Proctor et al., 2013).

Illustrative example: In smoking cessation interventions, this might involve specifying that GPs should ask about smoking status and offer brief advice to all adult patients at every routine consultation.

Pro Tip: Being specific and contextual at this stage is essential. Interventions can easily fail if the target behaviour is defined too broadly or without clear links to clinical realities. Specifying 'what, who, where, and when' helps ensure strategic alignment across the intervention design, training, and evaluation phases.

Step 2: Map the Current Practice Environment

Before implementing a practice change, it is essential to assess the current practice environment and to surface key barriers to and enablers of change (Damschroder et al., 2009; French et al., 2012; Graham et al., 2006). This step helps identify existing workflows,

provider capabilities, and system-level barriers that may influence implementation success. Mapping the practice environment provides a realistic baseline and ensures that the intervention is tailored to fit within the existing healthcare infrastructure.
Illustrative example: In smoking cessation interventions, mapping may reveal that time constraints, lack of training in motivational interviewing, and competing clinical demands were key barriers to intervention implementation.
Pro-tip: A robust understanding of the practice environment is essential for selecting implementation strategies that are contextually appropriate. Without this, strategies may fail to address the actual determinants of practice. Mapping should extend beyond individual-level factors to include organisational workflows, interprofessional dynamics, and system-level structures that shape how change is implemented.

Step 3: Select and Adapt Implementation Strategies

After defining the practice change (Step 1) and mapping the current practice environment (Step 2), the next step is to select and tailor implementation strategies to support adoption. Strategies should be chosen based on identified barriers and enablers to implementing change and adapted to fit the clinical context, ensuring feasibility and long-term sustainability (French et al., 2012; Graham et al., 2006; Powell et al., 2015a).
Illustrative example: In smoking cessation interventions, strategies may include embedding reminders in electronic health records, offering training on brief motivational interventions, and providing take-home patient education materials.
Pro-tip: Strategy selection must be closely tied to identified barriers and designed with local feasibility in mind. Choosing strategies without matching them to the specific context risks low uptake, wasted resources, and short-lived change. Adapting strategies for fit - while retaining their core function - supports long-term sustainment.

Step 4: Prepare Implementation Tools

Once implementation strategies have been selected and adapted (Step 3), the next step is to develop practical tools and resources that support the integration of the new practice into routine clinical workflows. Tools should be designed to standardise delivery, facilitate documentation, and enhance accessibility for both providers and patients (French et al., 2012; Graham et al., 2006).
Illustrative example: In smoking cessation interventions, a standardised electronic health record template may prompt providers to record smoking status and provide brief advice to patients.
Pro-tip: Well-designed tools bridge the gap between training and consistent delivery. Poorly integrated or burdensome tools contribute to implementation drift and provider fatigue. Tools that match clinical workflows and are co-designed with users tend to be used more reliably and sustain practice change.

Step 5: Plan the Implementation Timeline

Successfully integrating new practices requires a carefully staged approach to ensure feasibility, provider readiness, and long-term sustainability. Implementation should be phased, allowing for piloting, iterative adjustments, and structured scaling (Birken et al., 2020; Greenhalgh and Papoutsi, 2019; Pearson et al., 2020; Proctor et al., 2015; Shelton et al., 2018).
Illustrative example: In smoking cessation interventions, piloting an implementation project in selected, 'early-adopter' sites may allow iterative refinement of training to meet the needs of staff before broader rollout.
Pro-tip: Rigid implementation timelines can lead to failure if unexpected challenges emerge. Phased rollouts with feedback loops allow early issues to be addressed and build provider confidence gradually. Iterative adaptation can strengthen fidelity to the target practice change and reduces risk of drifting back to old practices.

Step 6: Establish Monitoring and Evaluation Processes

To ensure the long-term success and sustainability of practice change efforts, a robust monitoring and evaluation framework is essential (French et al., 2012; Glasgow et al., 2001b; Graham et al., 2006). Evaluation should be proportionate, pragmatic, and aligned with both implementation and clinical goals.
Illustrative example: In smoking cessation interventions, monthly audits of electronic health record data can track delivery of brief advice to patients, supplemented by short provider surveys assessing feasibility and acceptability.
Pro-tip: Overly complex evaluation frameworks can overwhelm providers and hinder implementation. Selecting a small number of meaningful, feasible indicators and embedding data collection into existing systems improves sustainability, encourages learning, and supports real-time course correction.

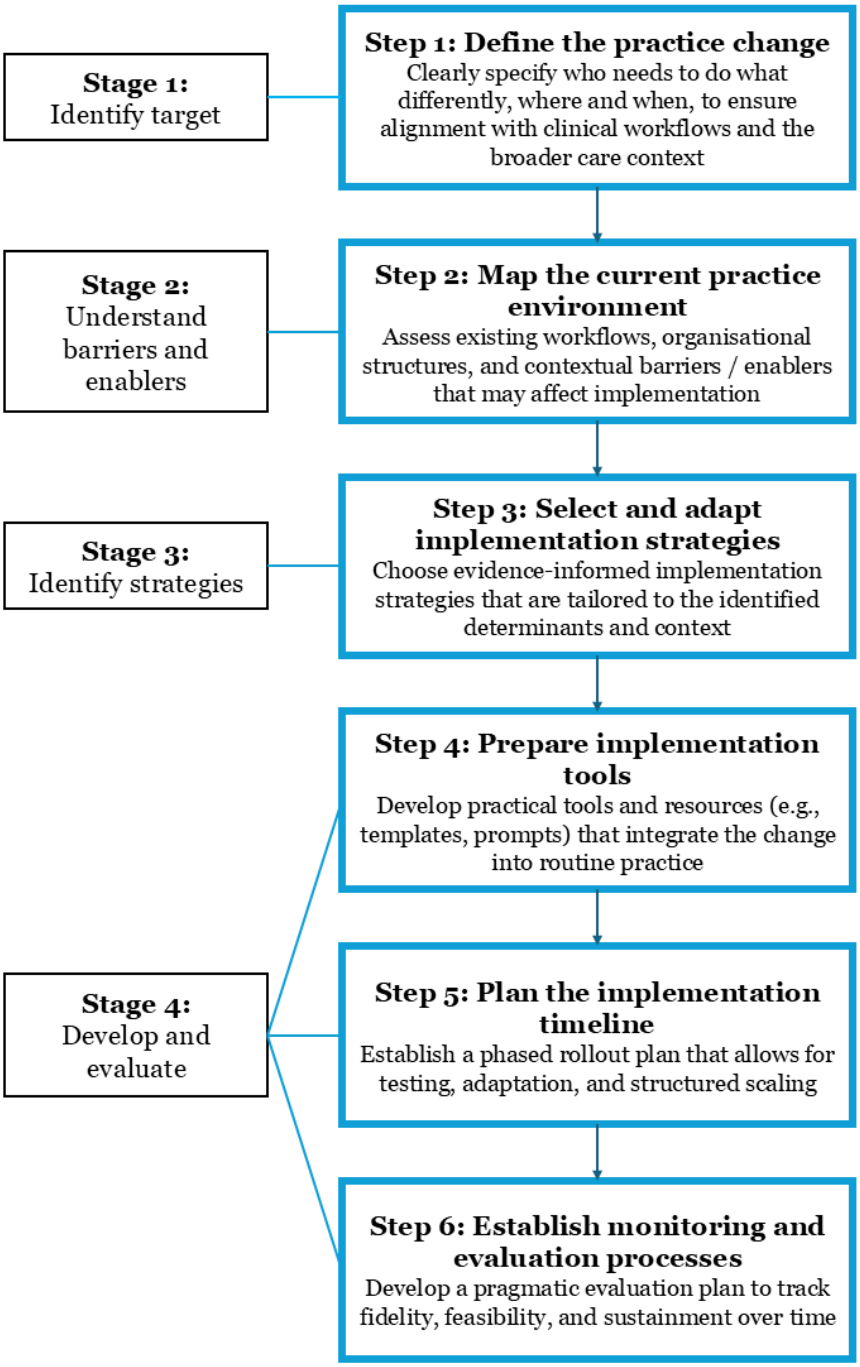

Fig. 1. Six-step guide for developing a practice change intervention.

4. Conclusion

Bridging the evidence-to-practice gap is essential for improving healthcare quality, patient outcomes, and system efficiency. This starter kit highlights the integration of implementation science and health psychology as a systematic, theory-driven approach to addressing these gaps by targeting HCP behaviour. While traditional health behaviour change efforts focus on patient or public behaviour, implementation science uniquely emphasizes the role of HCPs and other interest holders as agents of change in embedding evidence-based practices into clinical settings.

There are significant opportunities for implementation science and health psychology to inform one another, strengthening interventions designed to improve clinical practice. Future research should explore strategies for overcoming persistent implementation barriers, such as organizational constraints, resistance to change, and sustaining interventions over time. Additional empirical studies are also needed to test the effectiveness of different implementation strategies across diverse healthcare settings, ensuring their adaptability and impact.

Beyond theoretical alignment, the real-world application of these approaches is crucial. Successful real-world examples include structured depression screening in primary care (Damschroder et al., 2009, 2022), the de-implementation of unnecessary antibiotic prescribing (Hulscher et al., 2010; Patey et al., 2018), and large-scale rollouts of behavioural interventions such as smoking cessation programs (Glasgow et al., 2001b). These cases illustrate how systematically applying implementation science and health psychology principles can lead to meaningful improvements in patient care.

To advance this agenda, we encourage health psychology scholars to engage with implementation science frameworks (and implementation scientists) in their research and practice. Applying structured, theory-informed approaches - such as the step-by-step guide outlined in this starter kit - can increase the likelihood that practice change interventions are both effective and sustainable. Additionally, fostering interdisciplinary collaboration and co-designing interventions with key interest holders will likely accelerate this process. By taking a proactive role in shaping implementation efforts, health psychologists can contribute to a healthcare system where evidence-based care is not just generated but successfully applied at scale in real-world settings.

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