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SPRINT: A Structured Pathway for Real-world Implementation

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ABSTRACT

Background: Getting evidence-based interventions and service innovations into routine practice remains one of the hardest problems in health and care. Practitioners tasked with leading change often lack a clear, sequenced approach that accounts for the realities of pressured services: limited staff capacity, competing priorities, and fragmented authority. We developed the SPRINT Implementation Pathway to address this gap.

Methods: SPRINT is a theory-informed, evidence-based implementation pathway that specifies what to do, in what order, and who needs to lead each piece of work. We applied process-tracing methods to qualitative evidence syntheses of high-quality international implementation studies informed by Normalisation Process Theory. We then examined how implementation strategies cluster and develop over time. We consolidated these into 22 general strategies organised within six sequenced stages of activity.

Results: SPRINT specifies three interlocking layers of implementation work. First, a *practice bundle* (the intervention components, interaction dynamics, rules and resources, and institutional logics) that must be stabilised before implementation can proceed. Second, six *sequenced implementation activities*, (mobilisation, fit-to-setting, staff participation, enabling action, learning and reconfiguration, and normalisation), operationalised through 22 strategies. Third, a *leadership taxonomy* distinguishing four forms of distributed leadership aligned to different implementation functions.

Conclusions: SPRINT reframes implementation as the sequence of work under pressure. By making authority, accountability, learning, and sustainment explicit, it provides a practical and disciplined pathway for implementing complex interventions in already pressured health and care settings. We demonstrate SPRINT across four contrasting cases: remote ventilation therapy for amyotrophic lateral sclerosis, psychosocial coaching for people living with HIV, treatment escalation planning at end of life, and orthopaedic teleconsultation. Finally, we provide a practical guide to SPRINT suitable for front-line health and care managers and practitioners.

CONTRIBUTION TO THE LITERATURE

- SPRINT identifies three interlocking layers of implementation work and provides a structurally coherent account of what successful implementation requires.
- The practice bundle construct offers a precise vocabulary for describing what must be stabilised before implementation can proceed.
- SPRINT proposes six sequenced implementation activities operationalised through 22 discrete strategies, making the framework directly actionable for practitioners.
- Cross-case application across contrasting settings demonstrates SPRINT's transferability across clinical and organisational contexts.

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BACKGROUND

Health and care services face constant pressure to translate new clinical evidence and promising innovations into practice. However, getting them into practice quickly, safely, effectively, and sustainably, remains challenging. In the face of these pressures, taxonomies of implementation strategies have helped us to understand and apply systematic methods to support the implementation of innovations and evidence-based practices [1-5]. However, for practitioners leading change under real-world conditions, the persistent gap is not theory and method but how to act decisively amid competing demands and limited capacity: they are often expected to do more for less. Disparities between workforce capacity and actual workload, innovation exhaustion, and multiple competing priorities for budgets under pressure, all shape the challenges for real-world implementation. A practical and time-sensitive way to move from evidence of efficacy to incorporation in everyday practice without losing legitimacy, acceptability, safety, or learning, is therefore required.

The SPRINT Implementation Pathway

This paper describes the development and structure of the SPRINT Implementation Pathway. SPRINT is a theory-informed, empirically grounded, practice-oriented, implementation pathway. It translates evidence-informed implementation strategies into a sequenced and governable model of organisational work. It is designed to be a practical resource for people who are accountable for making change happen: frontline clinicians, service managers, improvement leads, and digital teams. Its central proposition is simple: implementation is work, and that work has a sequence. SPRINT draws on evidence syntheses that suggested a robustly evidenced set of implementation strategies [1, 6], and a sequential pathway to making implementation happen.

Implementation processes are ubiquitous: they are found in every kind of formal and informal organisation [7]. A longstanding definition of implementation is that it encompasses activities that occur between the adoption of an innovation and it becoming part of the organizational routine [8]. SPRINT rests on a set of definitions of the activities that lead to incorporation in organisational routine. In **Table 1**, we illustrate these definitions with a vignette—the composite story of a change in treatment of inflammatory bowel disease from an expensive monoclonal antibody requiring infusion in hospital to a much cheaper drug that can be self-administered by the patient at home. This change in treatment delivery is now well established [9-13]. SPRINT's definitions position implementation as a problem of organised time-sensitive work. The contexts in which implementation plans are operationalised are often acutely pressured and are characterised by unpredictable events and crises, and they must therefore be responsive to local needs. Of course, the ideal scenario is that implementation is rooted in collaborative identification of the need for change and in intervention *and* implementation codesign and coproduction. However, this may not always be possible. When it is, an approach that incorporates experience-based co-design [14], Patient-Centred Equity Design [15], or other participatory approaches [16], may be valuable here. User engagement, co-production, and co-design, are centrally important elements of successful implementation—and so is genuine consultation with staff charged with implementation.

Implementation is often characterised as a complex and non-linear process, rather than a sequence

of activities. At the outset we need to distinguish between the dynamics of implementation as it is lived [17, 18], and the analytic structure needed to plan, govern, and learn from it [19-29]. This is important: the claim that implementation is 'complex and emergent' offers little help for practitioners working under acute pressure, and who need to act. In this context, SPRINT offers an evidence-based approach to identify a workable sequence of activities, while leaving open the possibility that those activities may overlap, run in parallel, and may need to be revisited as circumstances change.

Insert Table 1 near here please

METHODS

The SPRINT Implementation Pathway is derived from an evidence synthesis of high-quality research informed by Normalisation Process Theory (NPT). NPT was developed between 2003 and 2025 [7, 30-32]. It identifies, characterises, and explains, the mechanisms that motivate and shape implementation processes. It focuses on teams, proposing that the central features of implementation are collective action and collaborative work [31]. Elsewhere it has been argued that these mechanisms (coherence, cognitive participation, collective action, and reflexive monitoring) are universal features of implementation processes [1]. Recent work, by Williams et al., [33] has revealed that NPT's core mechanisms predict implementation outcomes.

A qualitative evidence synthesis [1], informed by the NPT qualitative coding manual [34], reviewed NPT-informed qualitative studies [35-101]. This review examined process evaluations and implementation analyses across a wide range of clinical areas, settings, and intervention types. Results of the review were consolidated in a set of key implementation strategies [102]. To develop SPRINT as an implementation pathway that could be used practically asked how those strategies actually worked in projects that were included in evidence syntheses [102, 104] and that were informed by NPT [7, 105]. This led to the identification of six discrete stages within implementation processes and 22 implementation strategies that supported them. We also drew on insights from an earlier review that identified the temporal sequencing of activities described by NPT; identified key leadership approaches to implementation and identified key factors that characterised the content of interventions and innovations [1, 6, 31]. In repeated iterations of SPRINT (n=30), we eliminated overlapping strategies and described them using simplified language. In this paper, key components of SPRINT are supported by qualitative content analysis of the papers [35-101] included in the 2025 evidence synthesis [1].

PRACTICE BUNDLES: WHAT GETS IMPLEMENTED AND HOW DOES IT FIT TOGETHER?

Complex interventions and service innovations consist of bundles of practices, beliefs, and behaviours [7] we call these the practice bundle. Making the elements of a practice bundle explicit

builds (i) shared understanding of what must change, and how work needs to be distributed, and (ii) strategic sense-making and organisational re-orientation by senior leaders.

What's in the practice bundle?

Identifying components of the practice bundle is an essential part of intervention pre-implementation studies [106], in which implementation leaders and team members work prospectively to identify elements of the practice bundle that will promote or inhibit successful intervention. The bundle can be divided into four parts:

- **Tools and tasks.** These are the hardware, software, and administrative procedures that are to be implemented. How these are to be practically embedded in real-world workflows shapes the organisation and delivery of implementation work [36-39, 41-43, 45, 46, 48, 51, 53-56, 58, 60, 62, 63, 65-79, 83-97, 99, 101, 107].
- **Interaction dynamics.** These are the changes in relationships and patterns of communication that the intervention requires. Implementation succeeds or fails partly on whether these interactional changes are understood, supported, and routinised [37, 45, 47, 48, 51-53, 57, 58, 61, 62, 65, 70-72, 75, 78, 79, 82-85, 89, 92, 95, 96, 99, 101, 107].
- **Rules and resources.** Implementation processes depend on infrastructure, training, supervision, and governance. Implementation requires making these visible and deliberately resourcing them, managing actual workload rather than relying on hidden, informal work [36, 37, 39, 41-43, 45, 46, 48, 51, 52, 54, 55, 57, 60-63, 65-74, 76-79, 83, 84, 86, 88-97, 100, 107].
- **Institutional logics.** These are the professional and organisational shared assumptions, priorities, norms, and values that define what counts as legitimate, high-quality, or equitable practice. They need to change if a new way of working is to be accepted and sustained [35, 39, 41, 42, 45, 55-58, 60, 63, 65, 66, 75, 77, 79, 85-87, 90, 92, 93, 95-97, 100, 101]

Successful implementation is most likely to follow work that carefully unpicks and understands the contribution of different elements of a practice bundle to the implementation process. Implementation planners and leaders need to consider the implications of change across the whole taxonomy of intervention components. In **Table 2**, we compare how practice bundles are exhibited across four worked examples, and how they are revealed when SPRINT is operationalised prospectively, in real time, and retrospectively.

- *Prospective* application of SPRINT to the DENIM trial (Remote intensive optimisation of ventilation therapy in amyotrophic lateral sclerosis) by deploying remote intensive optimisation of ventilation therapy at home [108-110]. Delivery of the intervention is guided by a structured workbook using validated tools to identify barriers to guide value-based goal setting, and define a 12-week review schedule. Cloud-based telemonitoring provides continuous feedback on adherence and ventilation data without patient action. The DENIM Trial is in its early stages at the time of writing this paper.
- *Real-time* application of SPRINT to the SPHERE (Psycho-social Intervention for People with HIV—Evidence from a Randomised Evaluation) trial of health and wellbeing coaching for people with HIV [111-113]. At the component level, SPHERE relies on a repeatable coaching package (structured sessions, diaries, measurement schedule), plus an explicit boundary protocol for escalation. The SPHERE is still underway at the time of writing this paper.
- *Retrospective* application of SPRINT to the development of Treatment Escalation Plans at the

end of life (TEPs) [114-117]. TEPs hinge on a standard component of the medical record, a 'theory of use' that treats the modified record as a coordination device, and provides visibility to staff, patients, and caregivers, so the plan is usable at the point of care.

- *Retrospective* application of SPRINT to Orthopaedic teleconsultation [118-120] during the Covid Pandemic. Teleconsultation depended on a virtual clinic pathway with contingencies (e.g., shifting from video-to-telephone), and intervention components that reduce failed teleconsultations.

The data presented in **Table 2** also show why implementation is never just a technical problem. It unpacks the set of elements that requires consideration in the implementation processes described above: continuity and trust work in coaching in SPHERE; competence in challenging conversations and 'transportation work' to move shared understanding across boundaries in TEPs; and new distance etiquette and reassurance work in remote clinical interactions in orthopaedics and care delivery in amyotrophic lateral sclerosis. These interaction dynamics are underwritten by infrastructures—what protected time is available, how training and competence assessment is delivered, how platform provisioning and reliability routines make the new practice workable. Finally, the institutional logics explain why people judge the work legitimate and worth sustaining.

Insert Table 2 near here please

IMPLEMENTATION LEADERS: WHAT THEY DO AND WHY IT MATTERS?

A leadership taxonomy

Leadership is fundamental to implementation [121-123]. Successful implementation depends not on generic leadership, but on distinct forms of leadership that fit with tasks that need to be done. SPRINT distinguishes between four distinct forms of leadership. Each of these performs a necessary function in embedding new practices.

- **Operational leadership** makes the practice technically deliverable. Here, leaders are responsible for making the intervention workable by specifying workflows, artefacts, handoffs, and contingency arrangements. Clinical leads, service managers, and digital or quality improvement specialists enact this form of leadership by ensuring that the new practice can be delivered reliably within existing service structures [36, 38, 41, 43, 45, 46, 52, 53, 55, 58, 60, 62, 65, 67-79, 83-87, 89-93, 95, 101]. *Without this form of leadership, interventions and innovations remain conceptually attractive, but their implementation is problematic.*
- **Relational leadership** secures confidence, trust, and commitment. Champions, supervisors, and boundary spanners must communicate shared understanding and trust so that people are willing and able to do the new work together. This involves handling conflict, enabling disclosure, supporting learning, and maintaining motivation under uncertainty [35, 37, 39, 41, 45, 46, 49, 51, 55, 56, 77, 84, 96, 100]. *Even technically sound interventions and innovations fail when relational leadership is weak because staff do not feel safe, supported, or committed to the change.*
- **Process leadership** translates rules and resources into protected, resourced, and accountable

workflows. Executives, governance leads, and senior managers provide authorisation, prioritisation, infrastructure, and accountability. They make implementation real by protecting time, funding platforms, assigning responsibility, and embedding the intervention in formal organisational systems [37, 39, 41-43, 48, 54, 55, 60, 61, 70, 79, 88, 91, 92, 95-97]. *Without this leadership, new practices remain dependent on informal effort and are vulnerable to drift and collapse.*

- **Authorising leadership** creates spaces in which implementation is legitimised and made possible. Senior clinicians, professional leaders, and policy actors define what counts as legitimate, valuable, and successful [39, 41, 48, 49, 53-55, 58, 66, 70, 73, 74, 78, 79, 82, 92, 124]. *They authorise the trade-offs inherent in change and articulate why the new practice is worth sustaining.*

Leadership is not about finding the right individual, but is about bringing together the right leadership activities as implementation progresses. In **Table 3** we show how leadership approaches are distributed across practice bundle components. Understanding what forms of leadership are needed is an essential part of pre-implementation assessment [106].

MOVING FORWARD: HOW DO HAND-OFFS AND ESCALATION SHAPE IMPLEMENTATION?

Implementation processes require co-ordination

Hand-offs are the structured transfers—of responsibility, information, and decision authority between actors, teams, or organisational units—that occur when work moves across professional, disciplinary, team, or service boundaries. Effective hand-offs are not informal exchanges but governed interactions: they specify what is being transferred, who assumes responsibility, what decision rules apply, and how accountability is confirmed [35, 39, 61, 71, 72, 78, 97, 99]. Because implementation depends on coordinated action, poorly organised hand-offs can interfere with the process. Hand-offs are not just informational exchanges, but build trust. Trust sustains safe transfer of responsibility, and breakdowns in hand-offs can lead to failures. Designing and supporting hand-offs and defining escalation procedures are core elements of making new practice bundles safe, workable, and sustainable under real-world service pressures [46, 48, 60, 65, 83, 86, 96].

Across the four worked examples (DENIM, SPHERE, Treatment Escalation Plans, and Orthopaedic Teleconsultation), hand-offs and escalation appear as core governance mechanisms. These examples show that implementation processes depend on whether transfers of responsibility and decision authority are explicitly designed, legitimised, and resourced. In SPHERE, boundary protocols defined when psychosocial work should escalate to clinical teams, making ‘who does what’ explicit within the intervention model itself. In DENIM, escalation is embedded in structured monitoring pathways, where predefined thresholds trigger review. In contrast, in Treatment Escalation Plans (TEPs), uneven role clarity and cross-site ownership exposed the fragility of hand-offs when governance arrangements were inconsistent. Hand-offs and escalation pathways were degraded when legitimacy or ownership was contested (e.g., TEPs). Across all cases, hand-offs and escalation are relational events sustained by trust. Whether in coaching relationships (SPHERE), anticipatory coordination in end-of-life planning (TEPs), or remote clinical interactions (teleconsultation), safe

transfer of responsibility required confidence in the competence and intentions of others. Finally, the cases indicate that escalation degrades without infrastructure and learning loops. Monitoring systems, audit processes, supervision channels, and platform reliability were not optional adjuncts but stabilising conditions for escalation to function over time

THE SEQUENCE OF SPRINT IMPLEMENTATION STRATEGIES

The preceding sections have established what gets implemented (practice bundles) and how it is led (distributed leadership). In this section, we set out *how* implementation unfolds over time. SPRINT organises implementation into six sequenced stages, each comprising a set of interdependent strategies. Together, these stages form an implementation pathway from strategic intention to normalisation. The six stages are presented in sequence because sequence matters in relation to planning and operational functions of implementation. At the same time, the stages are not a simple linear progression. Implementation unfolds in organisationally and clinically complex environments, and progress is therefore contingent on circumstances. Later stages may expose weaknesses in earlier ones, requiring teams to return to and strengthen prior work before continuing. What the sequence specifies is a set of contingent actions, making clear *what must be in place* before the next stage of work can proceed with confidence. The strategies that follow are therefore best read as a framework for deciding what to prioritise, what to revisit, and when the work of implementation really has moved forward.

Start with mobilisation

Mobilization is concerned with converting strategic intentions into governable action. Rather than simply generating enthusiasm, governance is established through protocols, plans, sponsorship, and decision rules that make ownership and authority explicit [35, 45, 46, 48, 49, 52-55, 57, 60, 65, 79, 83-86, 91, 96]. To support mobilization, we propose three interdependent strategies.

#1 Develop a formal implementation plan specifying who will do what, when, under what decision rules. Implementation works better when people work together. Including everyone who needs to be involved implementation in creating the plan, ensures that they understand why the change matters and what they need to do. This shared understanding makes the plan actually work in practice.

#2 Define who is responsible for each element of implementation and with what authority. Everyone needs to know what they are responsible for. Clarity about who does what, ensuring that people know what is expected of them, means that work gets coordinated more smoothly, and implementation moves faster.

#3 Identify and secure the required resources. Successful change happens when the time is right and the setting is ready. It is important to be sure that the host organisation is ready to adopt this change, that staff are positioned to deliver it, and how it will change their work. Understanding these fit issues in advance makes the change easier to embed and sustain.

Ensure fit-to-setting

Implementation processes call for systematic work to distinguish fixed from adaptable components,

identify dependencies, and eliminate duplication and workaround labour [35-38, 41, 43, 45, 47-49, 51-58, 60-62, 64-79, 82-87, 89-97, 101]. The integration of a practice bundle in existing workflows and infrastructures is supported by the following strategies.

#4 Systematically identify which elements can be adapted and how to preserve core components. For an intervention to succeed, it must fit the setting. This doesn't mean one-size-fits-all. Instead, adaptation needs to be deliberate and based on local circumstances. This makes it more acceptable, more deliverable, and more likely to work.

#5 Understand how the intervention will disrupt pathways, routines, and workflows. Implementation only works if the new practice bundle does not interfere with existing workflows. Before starting, identify potential sources of unnecessary extra work or conflict with established systems. The goal is for the new practice to replace or streamline what people already do, not add on top of it.

#6 Appoint and resource champions to drive implementation and spread operational knowledge of the intervention. Champions are people who believe in the change and who will work to make it happen. They need protected time, training, and clear authority to make decisions. When they are properly resourced, they can show others how to do the new practice, keep motivation going, and make sure the change sticks across the whole organisation.

#7 Identify and address practical and organisational barriers that prevent staff and patients from engaging. Find out what is stopping people from engaging with the change and fix it. Ask people directly: what makes this difficult? What would help? Then act on what they say. This keeps people engaged and shows that their concerns matter. When barriers are addressed, people are more willing to support the change.

Ensure staff participation

These strategies help people understand how the practice bundle differs from and improves current practices, and what counts as success [35-39, 41-43, 45-47, 51, 55-58, 60, 64-66, 72-75, 77-79, 84-90, 92, 95-97, 100, 101]. They help strengthen the shared reasoning and assumptions, and the institutional logics, that motivate people to commit time and effort to the change.

#8 Show team members how the implementation process improves their practice. People will only support a change if they understand why it is worth doing. Clarity about how this change improves on the current way of doing things rests on evidence that staff need to see and be convinced by. What will improve for staff? What needs to be done to convince them?

#9 Agree what success looks like and how it will be judged. Team members need to reach a consensus on what change will achieve. By the time you start, everyone should be clear on their goals and have had a say in setting them. This prevents confusion later and stops people from pulling in different directions.

#10 Make explicit how the intervention benefits patients and other service users. Colleagues will only really engage with the change if they believe it is worth doing and relevant to their work. When people understand the advantage that change confers on them, they are more willing to participate, and feel greater ownership.

#11 Maintain hands-on leadership and oversight to sustain commitment. Implementation does not end after launch. Leaders need to keep working actively to keep people informed, answer questions, and maintain motivation. Regular communication matters. Recognition matters. When people feel that leadership cares about them and values their work, they are more likely to stay committed.

Enable action

Implementation follows empowerment. When team members' skills, workload and capacity, relationships, communication, and organisational support, are aligned they can enact the practice bundle without excessive burden or risk [35, 36, 39, 42, 43, 45, 46, 48, 49, 51, 52, 54, 55, 57, 60-63, 65-79, 83-86, 88-94, 96, 97, 99, 100]. This stabilises both interactional capacity and resource sufficiency. Enabled action is supported by these implementation strategies:

#12 Ensure the intervention works without destabilising other core activities. Do not ask people to overturn how they work. Instead, design the new practice to fit alongside what they already do. Keep changes to existing processes minimal. The less disruption you create, the less resistance you will face. When the new practice does not compete with other priorities and does not require people to abandon established systems, people are more willing to adopt it.

#13 Establish trust, reliability, and protection through relationships and collaboration. People will not work together unless they trust each other. Trust is built by being honest about challenges, following through on commitments, and treating people fairly. When team members trust each other, they work more smoothly together, morale improves, and implementation succeeds. Without trust, people protect themselves and implementation stalls.

#14 Provide the skills, training, and tools required to perform the new practice. People cannot do something they have not been trained to do. They need focused, practical training on how to deliver the new practice. Training alone is not enough, however. People need ongoing support to answer questions and solve problems. When people are properly trained and supported, they perform better and implementation succeeds.

Work through the learning loop

Team members can promote the sustainability of a practice bundle through learning. Learning rests on monitoring, feedback, and structured appraisal. Over time, teams can iteratively simplify and refine delivery so that only workable and useful elements persist [35, 37-39, 42, 45, 46, 49, 51-53, 55, 57, 58, 60, 62-65, 67-72, 76-78, 83, 86-89, 92, 96, 97, 99-101]. These strategies provide a

foundation for supporting the learning loop:

#15 Track participation, fidelity, and outcomes. These three things need to be tracked: (i) Is the new practice being used? (ii) Are people using it correctly? (iii) Is it making a difference? Data collection on these topics supports early identification of problems and enables adjustments.

#16 Use planned, organised, and structured channels to interpret data and reflect on stakeholder experiences. After launch, the team needs to meet regularly to discuss what is working, what is not, and what needs to change. Frontline staff see problems first. Responding to their concerns ensure that the intervention stays effective and relevant.

#17 Provide channels for reactive and informal reporting of risks and problem solving. People need multiple ways to give feedback—not just formal surveys or meetings, but conversations, email channels, and casual check-ins with implementation leaders. When people know their feedback is genuinely wanted and will be acted on, they trust leadership more and take ownership of the implementation process.

#18 Revise workflows and components based on what is learned. Staff feedback can streamline tasks, make workflows easier, and make the intervention more practical. Implementation works better when it is shaped by the people doing the work, not just by leaders and designers.

Assess Normalisation

Implementation succeeds when interventions and innovations are routinely incorporated into everyday practice. Changes to role, policies, and evaluation systems, ensure that practice bundles are institutionally embedded and cease to be dependent on individual enthusiasm and temporary mobilisation [35-37, 43, 46, 47, 49, 51, 53, 55-58, 61, 62, 65, 70-75, 77-79, 84, 85, 93, 95, 97, 99-101]. Monitoring is centrally important to understanding implementation progress. These strategies support sustainment.

#19 Train staff to collect, interpret, and use implementation data. Training staff to participate in evaluation may lead to better understanding of the effectiveness of the tools and tasks that make up the intervention. By equipping staff with the necessary tools and techniques, organisations can ensure robust evaluations and foster a culture of accountability and continuous improvement.

#20 Update team structures to reflect the new way of working. The new practice may require different team structures or changed roles. Do not keep old structures if they no longer fit how work will be done. Update job descriptions so people understand their new responsibilities. Create clear reporting lines and handoffs. When team structures match the new workflows, people work together more smoothly, and the change is more likely to stick

#21 Revise policies, guidelines, and governance to support embedding the intervention. For

the new practice to last, it must become official policy, not stay as a project or initiative that can be dropped. Update policy documents, procedures, and guidelines so the new practice is the standard way of working. Embed it in hiring, training, and performance assessment. When the organisation officially commits to the new practice through policies and systems, it becomes permanent. Without this, the new practice will disappear when the project ends

#22 Define what counts as successful normalisation, and for whom. The success criteria you defined under strategy #9 ensure clarity and accountability for implementation outcomes. Clear evaluation metrics enable assessment of progress, identification of gaps, and confirmation that the intervention has been routinely incorporated into practice.

Insert Table 3 near here please

Worked examples of implementation strategies in practice

In **Table 3** we show how the SPRINT Implementation Pathway defines a sequence of activities for different kinds of implementation projects, and links them to both practice bundle components and leadership approaches. In the SPHERE trial, early mobilisation was explicit because it was a trial: a protocol framed the work; readiness was explored; and clear progression criteria turned both the pre-implementation study and the trial pilot phase into controlled learning processes [111-113]. As the trial has proceeded, attention has centred on resourcing staff participation, and boundary management between clinical and psychosocial work. In the development of Treatment Escalation Plans specification was strong but not protocol-driven, and operationalisation varied between sites suggesting unresolved questions about ownership [114-117]. Orthopaedic teleconsultation showed a different mechanism: the emergency conditions that arose during the COVID crisis compressed planning, so implementation proceeded while uncertainties about clinical suitability and acceptable quality remained live; work then concentrated on workflow redesign [118-120]. In the DENIM trial implementation will be fragile until the intervention stabilises—it is conditional on patient acceptability and clinical quality, and some care may return to face-to-face interactions.

DISCUSSION

Implementation is a structured process that can be sequenced and governed in practice. Using SPRINT as an implementation pathway complements existing determinant frameworks, process models, and implementation theories (e.g. [7, 50, 121, 125-130]). Practitioners are typically focused on implementing change in the organisation and delivery of care within a healthcare setting or service. Rather than theoretical tools for effective implementation study design and evaluation, they need to know how to practically get the job of implementation done in settings characterised by acute pressure on resources, and the cognitive burdens that arise from multiple competing tasks. Their world is crowded with many different problems and pathways, and they need to know how to embed service innovations in services under pressure, and scale them up. Typically, these are construed as problems of change management [131, 132], technological innovation [133], and

project management [134]. The change management literature tends to emphasise vision and staff engagement as drivers of transformation [135, 136]. These are important considerations for implementation in health and care settings that are characterised by fragmented authority, competing priorities, and chronic capacity constraints.

The SPRINT Implementation Pathway focuses action through the organisational mechanics of delivery: who is authorised to decide, how work is allocated and sequenced, how dependencies are managed, and how progress is monitored. By requiring explicit implementation plans, decision rules, ownership, and escalation routes before technical roll-out begins, SPRINT converts abstract commitments into governable action. It thus provides the delivery spine that allows change programmes to move beyond mobilisation and communication into sustained operational control. Importantly, the specific implementation strategies identified in SPRINT are compatible with those previously proposed by Powell *et al.*, in their *Expert Recommendations for Implementing Change* (ERIC [2, 3, 5]). However, SPRINT is founded on evidence syntheses of implementation projects rather than a Delphi study of researchers, and it specifies implementation mechanisms that ERIC leaves implicit.

How SPRINT can be used

SPRINT is designed as a practical implementation pathway for people who are accountable for delivering change at pace in real-world service settings. It can be used prospectively to plan implementation, in real time to govern and steer intervention delivery, and retrospectively to diagnose why embedding has stalled or succeeded. No implementation framework can predict and solve every implementation problem. Even so, SPRINT provides a structured way to make implementation work visible, sequenced, and accountable.

- *Prospective use: planning disciplined implementation.* SPRINT can be used at the outset of a project to design a staged implementation plan. Rather than beginning with roll-out, teams start by performing a pre-implementation assessment: clarifying the practice bundle—the intervention components, required interaction changes, rules and resources, and institutional logics that must hold for the new practice to function. This forces early attention to governance, resource commitments, workflow design and redesign, and legitimacy, rather than assuming these will settle themselves during delivery. Teams then work through the six SPRINT activities in sequence. Mobilisation establishes a shared plan, defined roles, escalation routes, and secured resources before technical deployment begins. Fit-to-setting distinguishes *fixed* from *adaptable* elements, and supports the redesign of interventions and innovations in context. Coherence and enrolment build shared understanding of value and success criteria. Enabling action ensures staff have the skills, protection, and workload alignment required to perform the new work safely. Learning and reconfiguration formalise monitoring and structured reflection. Normalisation embeds the practice into policy, role descriptions, and governance systems so that it no longer depends on individual enthusiasts. Used prospectively, SPRINT prevents premature acceleration. It helps teams sequence governance, adaptation, meaning-making, and learning so that later-stage activities are not undermined by weaknesses in earlier ones.
- *Real-time use: evaluating activity under pressure.* SPRINT can be used as a live management tool. This approach turns implementation into a governable workflow. It makes ownership explicit ('who decides what?'), clarifies escalation routes, and ensures that risks—such as un-

resourced training, unstable workflows, or weak legitimacy—are identified early. Because SPRINT links strategies to leadership modes (operational, relational, process, authorising), it also clarifies which form of leadership is required at different points. Implementation problems are therefore reframed as mismatches between required work and available authority—they also call into question whether activities and mechanisms need to be returned to, or repeated—rather than as individual failure or resistance. In pressured systems, this real-time use is particularly valuable. It supports disciplined pace without loss of safety or accountability.

- *Retrospective use: understanding outcomes.* SPRINT can be applied retrospectively in an intervention *post-mortem* examination to explain why apparently well-designed interventions and innovations fail or succeed to normalise into practice. Teams can examine which activities were incomplete, sequenced prematurely, or weakly resourced. For example, stalled implementation may reflect weak mobilisation (unclear ownership), inadequate fit-to-setting (workflow disruption), insufficient buy-in (unclear value narrative), or absence of structured learning mechanisms. This diagnostic use strengthens organisational learning. It enables teams to distinguish between problems of intervention design and problems of implementation. It also supports more precise evaluation since outcomes can be interpreted in relation to which layers of work were stabilised and which were not.

In practice—whether SPRINT is applied prospectively, in real time, or retrospectively—activities on the implementation pathway may overlap and need to be revisited as settings change or new risks emerge. Later stages can expose weaknesses in earlier activities, requiring a return to thinking about governance or workflow design. Sequencing is therefore about conditional dependencies across activities, not a one-dimensional linear process. SPRINT provides disciplined order to implementation work under constraint while preserving the adaptive flexibility required in complex service environments.

In **Appendix A** we provide a practical guide to SPRINT intended for front-line health and care managers and practitioners. This integrates the three interdependent elements of SPRINT: (i) practice bundles, which specify the intervention components; interaction strategies, rules and resources, and institutional logics that must be stabilised for a new practice to function; (ii) leadership approaches, which specify the different forms of leadership work required to achieve implementation over time; implementation strategies, which describe a sequenced set of strategies required to move interventions and innovations from strategic intention to routine practice.

How SPRINT fits with the wider field of implementation science

As we have noted above, SPRINT is derived from work that develops and applies NPT. NPT is an evidence-based and validated theory that *explains* the mechanisms that drive implementation processes. In the same period that NPT and the empirical work that informed it has been developed, multiple staged determinant frameworks of adoption and implementation have appeared that are intended to support implementers [19-29]. In Table A and B of the Online Supplementary Documentation attached to this paper we briefly describe key staged frameworks and summarise their contents to show that they are compatible with the SPRINT Implementation Strategies. In the same period, multiple determinant frameworks that describe factors that promote or inhibit

implementation, and explanatory theories that explain underlying processes and mechanisms, have also been developed [7, 50, 121, 125-130]. These are described in Tables C and D of the Online Supplementary Documentation attached to this paper. The purpose of these tables is to show that SPRINT is compatible with a wider set of theories, models, and frameworks in implementation science. Recent reviews [137, 138] provide a useful background to SPRINT's fit with the wider terrain of implementation science.

In addition to assessing the compatibility of SPRINT to other perspectives in implementation science, it also supports intervention and innovation development using both the NIH Stage Model [139, 140] and the MRC Complex Intervention Framework [17]. These approaches to intervention design and evaluation clearly articulate the translational journey of complex interventions and innovations in terms of developmental maturity, theory refinement, feasibility testing, evaluation, and scale-up. What is less explicitly specified in either framework is the structured organisational work required to move safely and accountably between these phases in real-world service settings. This is described in greater detail in Table E of the Online Supplementary Documentation.

STRENGTHS AND LIMITATIONS

By organising implementation into a set of interdependent stages of activity, SPRINT provides a structure that can be used prospectively to both plan change, and to understand its dynamics. It is robustly grounded in evidence syntheses and in the case-study material summarised in **Table 2** and **Table 3**. A second strength is its explicit focus on implementation under acute service pressures. To support this. In **Appendix A** we provide a practical guide to SPRINT suitable for front-line health and care managers and practitioners. This make the implementation pathway particularly well suited to organisations operating under time pressure, workforce constraint, and high accountability. Important limitations remain. Most importantly, SPRINT rests on evidence syntheses, [141, 142], and this means that claims about its utility therefore rest on the plausibility of its analytic synthesis and case studies rather than the results of empirical tests. The evidence-base for SPRINT is skewed towards high-income health systems. Its applicability to low- and middle-income contexts, community-led initiatives, or other public services, have not yet been established. SPRINT represents an analytic synthesis and structured development exercise. Future research will explore how SPRINT performs under severe structural constraints—such as workforce shortages, unstable funding, and unpredictable policy changes.

CONCLUSION

SPRINT offers a distinctive contribution to the work of implementation practitioners in service settings—and to the work of researchers. It offers a disciplined way to manage change in conditions of constraint by making authority actionable, learning, and sustainment visible and governable. In doing so, SPRINT advances both the science and practice of implementation by showing how complex interventions and innovations can be embedded safely, and sustainably, in real-world health and care services. For practitioners, the SPRINT Implementation Pathway offers a structured way of disentangling both the intervention components and leadership approaches that form part of the context in which new practices become both workable and legitimate in everyday service delivery. Together, its components specify what kinds of work are required to drive implementation. We have offered exemplar implementation strategies through which this work can be accomplished.

These set out the sequence of activities that promote the move from strategic intentions to routine practice. For researchers, the SPRINT translates implementation strategies derived from NPT into a sequence of concrete, observable forms of organisational work that can be planned, enacted, and evaluated. Drawing on a robust evidence base, this paper shows that successful implementation depends on stabilising multiple interlocking layers of work. It reframes implementation not as a problem of adoption or diffusion, but as a problem of delivery under pressure.

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ABBREVIATIONS

COVID-19	Coronavirus Pandemic 2019
DENIM	Study Acronym: Remote intensive optimisation of ventilation therapy in amyotrophic lateral sclerosis
ERIC	Expert Recommendations for Implementing Change
HIV	Human Immunodeficiency Virus
IBD	Inflammatory Bowel Disease
IT	Information Technology
MRC	Medical Research Council (UK)
NIH	National Institutes of Health (US)
NIHR	National Institute of Health and Care Research (UK)
NPT	Normalisation Process Theory
QI	Quality Improvement
RAG	Red / Amber / Green – status rating
RCT	Randomised Controlled Trial
SPHERE	Study Acronym: Psycho-social Intervention for People with HIV—Evidence from a Randomised Evaluation
SPRINT	Practice-focused implementation pathway
TEP	Study Acronym: Treatment Escalation Plans
UK	United Kingdom
US	United States

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Table 1. SPRINT key definitions and descriptive vignette.

Key Definition	Descriptive vignette: Implementation of biosimilar (ustekinumab) in place of a biologic drug (infliximab) in the treatment of inflammatory bowel disease
An implementation process occurs when one group of actors attempts to translate their strategic intentions, into the everyday practices of others [143].	The leadership of a hospital gastroenterology department was agreed that care for patients with inflammatory bowel disease should change from drug treatment with biologics (e.g. infliximab) to lower-cost biosimilars (e.g. ustekinumab). Senior leaders in the department communicated this policy to resident gastroenterologists, specialist nurses, and hospital pharmacists. The whole clinical team needed to incorporate new protocols into routine prescribing, patient safety, consent processes, professional-patient interactions, and monitoring practices. The implementation process unfolded as strategic intentions around cost-containment were translated into day-to-day patient care.
What is to be implemented is never a simple ‘thing-in-itself.’ Health and care interventions and service innovations have many moving parts. They are often thought of as complex systems [144], and these are integrated into very complex systems.	Moving patients from biologics onto biosimilars involved reworking clinical eligibility criteria, patient information materials, shared decision-making conversations, pharmacy procurement contracts, infusion scheduling, electronic prescribing updates, pharmacovigilance systems, and outcome monitoring. These activities needed to be undertaken within existing funding arrangements, regulatory guidance, budget constraints, and service capacity pressures.
An implementation strategy is an activity that is embedded in the design and delivery of interventions and innovations with the expectation that it will improve intervention take-up, scalability, and outcomes [1].	To support the switch to biosimilars, the departmental leadership offered clinician education sessions on comparative efficacy and safety data; appointed a clinical champion within the gastroenterology department; produced standardised patient information leaflets, and introduced prescribing dashboards that provided feedback on outcomes. These activities were deliberate strategies intended to increase professional confidence, patient acceptance, and sustained uptake.
Governance is the set of roles, decision rules, and escalation mechanisms that make implementation safe, accountable, and controllable under routine service pressures [145, 146].	In implementing the transition to biosimilars, the department defined who authorised switching decisions; how clinical exceptions were documented; how financial savings were tracked; and how adherence to national guidance is monitored. Changed governance arrangements ensured that cost-efficiency objectives did not compromise patient safety.
Escalation mechanisms move a governance problem to someone who has the authority and resources to fix it, within a defined time [147].	If clinicians observed unexpected drug reactions or disease flares following the switch to a biosimilar, these were first reviewed within the IBD multidisciplinary team. If concerns persisted, they were escalated to the hospital medicines safety committee, where decisions could be made about pausing the switch programme, issuing revised guidance, or commissioning further review.

Table 2. What is to be implemented? Worked examples of practice bundles

What is to be implemented?	SPRINT applied prospectively	SPRINT applied in real time while implementation is in progress	SPRINT applied retrospectively	
	DENIM: Remote intensive optimisation of ventilation therapy	SPHERE: HIV health & wellbeing coaching [111-113]	TEPS: Treatment Escalation Plans at end of life [114-117]	Orthopaedic teleconsultation during COVID [118-120]
Tools and tasks (Intervention components changed behaviours & material practices)	<i>An implementation blueprint</i> defining aims, goals, milestones, and permitted adaptations. <i>A structured workbook</i> using validated tools to identify barriers, guide value-based goal setting, and define a 12-week review schedule. <i>Cloud-based telemonitoring</i> providing continuous feedback on adherence and ventilation data without patient action. <i>Home overnight oximetry</i> triggered at >4hrs/day use to monitor ventilation effectiveness.	<i>A repeatable coaching package</i> : structured sessions plus session diaries and a measurement schedule made delivery and change visible. <i>A documented boundary protocol</i> inside the delivery model defined coaching/support and what triggers clinical escalation.	<i>A standard plan</i> plus an explicit routine for completing and reviewing it. <i>A theory of use</i> that specified how the plan is expected to work (not a form to fill, but a coordination device). <i>A records-visibility requirement</i> (electronic access/availability) so the plan was usable at point of care.	<i>A virtual clinic pathway with explicit contingency procedures</i> (e.g., if video failed, switch to telephone). <i>A multi-modal model</i> (telephone vs video) treated as an adaptable component selected to fit capability and clinical need. <i>Digitised supporting materials</i> plus pre-programme tutorials for patients and staff to reduce start-up failure.
Interaction dynamics (Relationships and capabilities; changed interaction patterns)	<i>Value-based consultation at initiation</i> aligned patient goals with clinical targets so NIV optimisation was negotiated, not imposed. <i>Intensive early contact</i> aiming to align patient-staff goals sustains the relationship through the highest-risk period for abandonment. <i>Cross-site community of practice</i> normalised peer troubleshooting and shared emerging solutions. <i>Local champions</i> maintain site-level momentum beyond initial training.	<i>A continuity-dependent coaching relationship</i> where trust enabled disclosure (including trauma-informed assumptions about safety). <i>Explicit 'who does what' conversational handoffs</i> : between the coach and wider clinical team (signposting, escalation, feedback loops). <i>Safe reflection channels</i> (feedback without penalty) were built into supervision/check-ins, so implementation friction became actionable data.	<i>Difficult-conversation competence</i> was defined as a core interaction strategy (handling anxiety, family conflict, uncertainty under time pressure). <i>Negotiated obligations across patient-carer-professional relationships</i> (who speaks for whom; what agreement counts). <i>Transportation work</i> led to attempts to secure active coordination so that shared understanding travelled across health systems.	<i>New distance etiquette</i> plus reassurance work to compensate for reduced interactional quality was engineered, not assumed. <i>Mutual learning structures</i> normalised rapid troubleshooting as part of routine delivery. <i>Work was redistributed into patient homes</i> : managing chaotic environments and 'show me' limits became interactional work.
Rules and resources (norms/roles. informational & material resources; delegated accountabilities)	<i>Protected additional staff time</i> explicitly costed. <i>Remote training</i> recorded for flexible access, minimising service disruption. <i>Localisation of telemonitoring schedule</i> encouraged to integrate monitoring activity into existing service. <i>Telemonitoring equipment</i> provided where needed treated as an organisational resource commitment. <i>10% workbook audit</i> and telemonitoring engagement data provided fidelity and accountability infrastructure.	<i>Protected legitimacy rules</i> : coaching was framed as a legitimate, protected space for sensitive work (not an optional add-on). <i>Training and competence infrastructure</i> (including competency assessment) and explicit resourcing/protected time were built in. <i>Minimal evaluation capability</i> meant that equity reach was made visible through monitoring.	<i>Governance and accountability rules</i> : reporting structures, and senior sign-off norms settled legitimacy disputes. <i>Training as a rule-resource</i> : repeated refreshers to handle turnover and prevent drift into 'form over process.' <i>Audit infrastructure</i> including out-of-hours call audit/case note review was included as a resourcing commitment to learning and accountability.	<i>Institutional safety rules</i> : confidentiality, appropriate virtual environment, and conduct norms were codified to make virtual clinics safe. <i>Platform provisioning</i> (e.g., Attend Anywhere at scale) plus equipment/software support incorporated as an organisational resource commitment.
Institutional logics (Agreements and values that authorize. and motivate action)	<i>Active optimisation over passive follow-up</i> : training presented the evidence gap (half of patients fail adequate use; inadequate correction of hypoxia doubles mortality). <i>Patient values as anchor</i> : First consultation operationalises the principle that targets derive from what matters to the patient. <i>Equity as part of success</i> : monitoring made reach and non-uptake visible, so improvement was not blind to exclusion.	<i>Continuity over throughput</i> : coaching created sustained supportive contact that routine models did not provide. <i>Equity is part of success</i> : implementation made reach/non-uptake visible, so improvement was not blind to exclusion.	<i>Anticipatory coordination</i> : assumed that decisions could be made before crises to reduce conflict and inappropriate escalation. <i>Shared decision-making was a moral and operational authority</i> and legitimacy depended on process, not paperwork. <i>Standardisation-for-transfer</i> : treatment escalation plans were seen as authoritative when they travelled across settings and remained usable.	<i>Access under constraint</i> : virtual care was justified as continuity-preserving care when face-to-face contact was constrained. <i>Pragmatic trade-offs were explicit</i> : travel/time saved versus limits of remote assessment and relational quality. <i>Legitimacy was technically conditional</i> : where virtual care could not meet consultation requirements, the institutional logic shifted back toward face-to-face.

Table 3. Implementation stages and strategies - worked examples.

Implementation stages	Implementation strategies.	Targets	Leadership approaches.	SPRINT applied prospectively.	SPRINT applied in real time while implementation is in progress.	SPRINT applied retrospectively.	
				DENIM: Remote intensive optimisation of ventilation therapy.	SPHERE: HIV health & wellbeing coaching [111-113].	Treatment Escalation Plans [114-117].	Orthopaedic Teleconsultation [118-120].
Mobilisation	#1 Develop a formal implementation plan.	Rules & Resources	Authorising leadership	Trial protocol and implementation pathway developed collaboratively with existing services	Trial protocol defined readiness and progression criteria in collaboration with existing services	Theory of use specified how plans should function	Planning compressed; redesign assumptions explicit
	#2 Define who is responsible for each element of implementation and with what authority.	Rules & Resources	Process Leadership	Roles aligned with current working practice	Clinical and psychosocial roles delineated	Role clarity varied across sites	Roles redistributed
	#3 Identify and secure the required resources.	Rules & Resources	Authorising leadership	National experts become peer leaders delivering training to drive legitimacy and provide peer support	IT and staffing dependencies managed	Organisational instability constrained continuity	Platform access shaped feasibility
Fit-to-setting	#4 Systematically identify which elements can be adapted and how to preserve core components.	Intervention components	Process Leadership	Allowance for local and individual adaptations in monitoring schedule guided by local expertise	Adaptation rules governed delivery	Debates about paper form dominated adaptation	Hybrid and multimodal models adopted
	#5 Understand how the intervention will disrupt pathways, routines, and workflows.	Intervention components	Operational leadership	Standard follow-up replaced by intensive 12-week review pathway structured through workbook.	Embedded within clinic workflows	Transfer across boundaries problematic	New coordination routines around video
	#6 Appoint and resource champions to drive implementation and spread operational knowledge of the intervention.	Interaction strategies	Authorising leadership	Remote monitoring equipment and additional staff time provided and access monitored.	Champions drove legitimacy and delivery	Key clinicians promoted uptake	Champions enabled rapid rollout

	#7 Identify and address practical and organisational barriers that prevent staff and patients from engaging.	Rules & Resources	Operational leadership	Needs-based technical support and central oversight to address common technical problems.	Peer navigation enabled engagement	Engagement uneven across sites	Tutorials and tech support enabled access
Ensure staff participation	#8 Show team members how the implementation process improves their practice.	Institutional Logics	Relational leadership	Evidence-based training for staff.	Contrasted with fragment services and hidden work	Confusion with existing plans undermined clarity	Framed as continuity-preserving care
	#9 Agree what success looks like and how it will be judged.	Institutional Logics	Authorising leadership	Value-based consultation negotiated individualised therapy goals with patients.	Success criteria and risks specified	Goals varied by service	Trade-offs between access and safety explicit
	#10 Make explicit how the intervention benefits patients and other service users.	Institutional Logics	Relational leadership	Provision of telemonitoring feedback on therapy success.	Value demonstrated via patient benefit	Value framed around coordination	Value conditional on assessment quality
	#11 Maintain hands-on leadership and oversight to sustain commitment.	Interaction strategies	Authorising leadership	Needs-based support provided	Supervision and check-ins sustained momentum	Oversight weak and inconsistent	Peer learning supported leadership
Enable action	#12 Ensure the intervention works without destabilising other core activities.	Intervention components	Operational leadership	Variation in monitoring schedule allowed to address patient needs	Workload redesigned to preserve fit	Operational fit variable	Fallback routines preserved flow
	#13 Establish trust, reliability, and protection through relationships and collaboration.	Interaction strategies	Relational leadership	Intensive early contact aiming to develop shared goals through the highest-risk period for treatment abandonment.	Safety routines supported sensitive work	Safety concerns undermined confidence	Confidentiality and environment rules strengthened
	#14 Provide the skills, training, and tools required to perform the new practice.	Rules & Resources	Operational leadership	Online training adapted to the existing experience of services.	Training and supervision enhanced capability	Training gaps reported	Shadowing and technical training enabled delivery
Learning loop	#15 Track participation, fidelity, and outcomes.	Rules & Resources	Process Leadership	-	Outcomes and equity monitored	Audits and reviews undertaken	Reasons for non-participation recorded
	#16 Use planned, organised, and structured channels to interpret data and reflect on stakeholder experiences.	Rules & Resources	Process Leadership	-	Management groups reviewed progress	Working groups appraised plans	Peer groups interpreted cases
	#17 Provide channels for reactive and informal reporting of risks and problem solving.	Interaction strategies	Relational leadership	-	Concerns voiced through supervision	Feedback channels inconsistent	Safety and technical issues reported
	#18 Revise workflows and components based on	Intervention components	Process Leadership	-	Adaptations stabilised through learning	Revisions followed contestation	Hybrid routines refined

	<i>what is learned.</i>						
Normalization	<i>#19 Train staff to collect, interpret, and use implementation data.</i>	Rules & Resources	Operational leadership	-	-	Evaluation capacity limited	Access barriers monitored
	<i>#20 Update team structures to reflect the new way of working.</i>	Rules & Resources	Process Leadership	-	-	Coordination fragmented	Relational expectations shifted
	<i>#21 Revise policies, guidelines, and governance to support embedding the intervention.</i>	Rules & Resources	Authorising leadership	-	-	Policy frameworks shaped plans	Virtual-care rules codified
	<i>#22 Define what counts as successful normalisation, and for whom.</i>	Institutional Logics	Authorising leadership	-	-	Normalisation was variable between sites.	Normalisation of remote care was achieved.

Appendix A:

The SPRINT Implementation Pathway: a user guide for implementers in practice

Getting evidence and innovation into everyday practice: a plain-English guide for clinicians, managers, improvement leads, and digital teams

Who this guide is for

This guide is for people who are accountable for making change happen in health and care services: frontline clinicians, service managers, improvement and transformation leads, digital teams, and programme boards. It applies wherever care is organised and delivered — across the range of health and care services.

You do not need any background in implementation science to use it. Everything here is written in plain English, and every element of the pathway is grounded in a large body of published research on how new practices become — or fail to become — part of routine care.

The central idea

Implementation is work, and that work has a sequence. New treatments, technologies, and ways of working do not automatically embed themselves in practice. They are embedded through organised work, done in a logical order, by people with the right kinds of authority. SPRINT tells you what that work is, who needs to lead each piece of it, and what must be in place before the next step can proceed with confidence.

SPRINT stands for **S**tructured **P**athway for **R**eal-world **I**mplementation.

Five terms worth knowing

SPRINT uses a small set of terms with precise meanings. They are worth two minutes of your time, because they describe things you will recognise immediately from your own experience.

Implementation process	What happens when one group of people tries to translate their strategic intentions into the everyday practices of others. The work runs from the decision to adopt a change, through to the point where it becomes routine, stops being new — or is abandoned.
Practice bundle	What is actually being implemented. Never just a tool, drug, pathway, or app: a bundle of intervention components, changed relationships, rules and resources, and shared values that must all hold together for the new practice to function.
Implementation strategy	An activity built into the design and delivery of a change with the expectation that it will improve take-up, scalability, and outcomes. SPRINT specifies twenty-two of them, in sequence.
Governance	The set of roles, decision rules, and escalation mechanisms that make implementation safe, accountable, and controllable under

	routine service pressures.
Escalation mechanism	A defined route that moves a problem to someone with the authority and resources to fix it, within a defined time. Not a complaints process — a safety and delivery device.

Three ways to use SPRINT

- **Before you start (prospective).** Use SPRINT to plan a staged implementation. Begin with a pre-implementation assessment: clarify the practice bundle, settle governance, roles, and resources, and sequence the work so that later stages are not undermined by weaknesses in earlier ones. Used this way, SPRINT prevents premature acceleration.
- **While it is happening (real time).** Use SPRINT as a live management tool. The Red/Amber/Green dashboard at the end of this guide turns implementation into a governable workflow: who decides what, where the risks are, and when to escalate. Problems are reframed as mismatches between the work required and the authority available — not as individual failure or ‘resistance’.
- **Afterwards (retrospective).** Use SPRINT as a post-mortem. When a well-designed change has stalled, the pathway helps you see which work was incomplete, started too early, or never resourced — distinguishing problems of intervention design from problems of implementation.

Whichever way you use it, remember: the sequence describes conditional dependencies, not a rigid timetable. Activities will overlap, run in parallel, and sometimes need to be revisited as circumstances change. Later stages often expose weaknesses in earlier ones. Going back is not failure — it is how implementation actually works.

Step one: know what you are actually implementing

A new intervention is never just a tool, a drug, a pathway, or an app. It is a set of activities, beliefs, and behaviours — a practice bundle. Implementations stall when teams roll out the visible, technical part of the bundle and discover too late that the invisible parts — relationships, resources, and values — were never addressed.

Before anything else moves, sit down as a team and map your practice bundle across the four elements below. This is the heart of your **pre-implementation assessment**: a prospective exercise in which implementation leaders and team members work out, together, which elements of the bundle will promote or inhibit success — before those elements get the chance to prove the point. Everything else in SPRINT depends on it.

Bundle element	What it means	Questions to ask as a team
Tools and tasks	The technical heart of the change: the hardware, software, administrative procedures, documents, and clinical tasks that make up the intervention — and how they will be practically embedded in real-world workflows.	What exactly will people do differently, with what equipment and paperwork? How will it fit into real workflows on a busy day?
Interaction	The changes in relationships and	Which conversations will

dynamics	patterns of communication the intervention requires: who talks to whom, how difficult conversations are handled, how trust is built and kept. Implementation succeeds or fails partly on whether these changes are understood, supported, and routinised.	change? Who gains or loses contact with patients or colleagues? Where could trust come under strain?
Rules and resources	The infrastructure, training, supervision, and governance the change depends on — made visible and deliberately resourced, with actual workload managed rather than left to hidden, informal work.	What protected time, kit, training, and supervision does this really need? Who pays? What hidden work are we currently relying on?
Institutional logics	The shared professional and organisational assumptions, priorities, norms, and values that define what counts as legitimate, high-quality, or equitable practice. These need to change if a new way of working is to be accepted and sustained.	Does this change fit how people here understand good practice? Whose idea of quality has to shift? Who authorises that shift?

Why this matters

Implementation is never just a technical problem. A coaching service rises or falls on continuity and trust; an end-of-life planning document depends on competence in challenging conversations; a remote clinic needs a new etiquette of reassurance at a distance. These interactions are underwritten by infrastructure — protected time, training, reliable platforms — and the institutional logics explain why people judge the work legitimate and worth sustaining. If you only plan for the tools and tasks, the bundle will fall apart at its weakest, least visible point.

Step two: get the right mix of leadership

Successful implementation does not depend on finding one heroic leader. It depends on bringing together four distinct kinds of leadership work, usually shared across several people, and matching them to what the change needs at each point. Most implementation problems that look like ‘resistance’ are really a mismatch between the work required and the authority available.

Leadership type	What it does	What happens without it
Operational leadership <i>Makes the change technically deliverable</i>	Specifies workflows, artefacts, handoffs, and contingency arrangements so that the new practice can be delivered reliably	The idea stays conceptually attractive, but nobody can make it work on a Tuesday afternoon.

	within existing service structures.	
Relational leadership <i>Secures confidence, trust, and commitment</i>	Communicates shared understanding, handles conflict, enables disclosure, supports learning, and maintains motivation under uncertainty.	Technically sound changes fail because staff do not feel safe, supported, or committed.
Process leadership <i>Turns rules and resources into protected, accountable workflows</i>	Provides authorisation, prioritisation, infrastructure, and accountability; protects time, funds platforms, assigns responsibility, and embeds the change in formal organisational systems.	The change runs on informal effort and goodwill, then drifts and collapses when key people move on.
Authorising leadership <i>Makes the change legitimate and worth sustaining</i>	Defines what counts as legitimate, valuable, and successful; authorises the trade-offs inherent in change; articulates why the new practice is worth sustaining.	Staff quietly conclude the change is not 'real' work and revert to what was legitimate before.

Leadership is not about finding the right individual; it is about bringing together the right leadership activities as implementation progresses. As part of your pre-implementation assessment, ask: do we actually have all four covered? Several types can sit with one person, and one type can be shared by many — what matters is the configuration, not the org chart. Each of the twenty-two strategies in the pathway below is tagged with the form of leadership that mainly carries it.

Step three: design your hand-offs and escalation routes

Implementation always involves work crossing boundaries — between professions, disciplines, teams, sites, and organisations. A hand-off is the structured transfer of responsibility, information, and decision authority that happens at those boundaries. Done well, hand-offs are governed interactions, not informal exchanges: everyone knows what is being transferred, who now assumes responsibility, what decision rules apply, and how accountability is confirmed.

Hand-offs are not just informational exchanges: they build trust, and trust is what sustains the safe transfer of responsibility. Breakdowns are usually relational failures — lost confidence, contested ownership — not technical ones, and poorly organised hand-offs can derail the whole process. Before roll-out, agree the following and write it down:

- **What is transferred.** The information, responsibility, and decision authority that moves at each boundary — not just the task.
- **Who assumes responsibility.** Named roles, not vague teams. 'Who does what' should be explicit inside the intervention model itself, not worked out in the corridor.
- **When and how to escalate.** Predefined thresholds that trigger review, and a clear route from a front-line problem to someone with the authority and resources to act — within a defined time.
- **What keeps it alive.** Escalation degrades without infrastructure and learning loops. Monitoring systems, audit, supervision channels, and reliable platforms are not

optional adjuncts — they are the stabilising conditions that allow escalation to function over time.

The pathway: six stages, twenty-two strategies

The heart of SPRINT is a sequence of six stages, each made up of practical strategies drawn from a large evidence base of real implementation projects. Read the sequence as a set of conditional dependencies: each stage tells you what must be in place before the next can proceed with confidence — not a calendar. Expect overlap, parallel working, and returns to earlier stages when later work exposes a weakness.

Each strategy below is tagged with the element of the practice bundle it works on (its **target**) and the form of leadership that mainly carries it. This is how the three layers of SPRINT — practice bundle, leadership, and sequenced strategies — lock together in use: every strategy is a piece of work, done on a specific part of the bundle, by someone with a specific kind of authority.

Stage 1 · Start with mobilisation

Carried mainly by authorising and process leadership

Convert strategic intentions into governable action. Enthusiasm is not a plan — mobilisation means protocols, plans, sponsorship, and decision rules that make ownership and authority explicit before anything is rolled out.

#	What to do	Target	Lead
#1	Develop a formal implementation plan: who will do what, when, under what decision rules. Build the plan with everyone who needs to be involved — shared understanding of why the change matters, and of what each person must do, is what makes the plan work in practice.	Rules & resources	Authorising
#2	Define who is responsible for each element of implementation — and with what authority. When people know exactly what is expected of them, work is coordinated more smoothly and implementation moves faster.	Rules & resources	Process
#3	Identify and secure the required resources — and check that the time is right and the setting is ready. Be sure the host organisation is genuinely prepared to adopt this change, that staff are positioned to deliver it, and that you understand how it will change their work. Settling these fit issues in advance makes the change easier to embed and sustain.	Rules & resources	Authorising

Stage 2 · Ensure fit-to-setting

Carried by process, operational, and authorising leadership, working through champions

Integrate the practice bundle into existing workflows and infrastructure. Systematically distinguish fixed from adaptable components, identify dependencies, and eliminate duplication and workaround labour before it becomes culture.

#	What to do	Target	Lead
#4	Systematically identify which elements can be adapted to your setting, and how to preserve the core components that make the intervention work. Fit does not mean one-size-fits-all: adaptation should be deliberate, based on local circumstances — that is what makes the change more acceptable, more deliverable, and more likely to work.	Intervention components	Process
#5	Understand exactly how the intervention will disrupt existing pathways, routines, and workflows — and plan for that disruption rather than discovering it. The goal is for the new practice to replace or streamline what people already do, not add on top of it.	Intervention components	Operational
#6	Appoint and properly resource champions to drive implementation and spread operational knowledge of the intervention. Champions need protected time, training, and clear authority to make decisions. Properly resourced, they show others how to do the new practice, keep motivation going, and make the change stick across the organisation.	Interaction dynamics	Authorising
#7	Identify and address the practical and organisational barriers that stop staff and patients engaging. Ask people directly: what makes this difficult? What would help? Then act on what they say — it keeps people engaged and shows their concerns matter.	Rules & resources	Operational

Stage 3 · Ensure staff participation

Carried mainly by relational and authorising leadership

Help people understand how the practice bundle differs from — and improves on — what they do now, and agree what counts as success. This stage strengthens the shared reasoning and institutional logics that motivate people to commit time and effort. It is where commitment is built or lost.

#	What to do	Target	Lead
#8	People will only support a change they understand the point of. What will improve for patients? What will	Institutional logics	Relational

	improve for staff? What evidence do people need to see to be convinced?		
#9	Agree what success looks like and how it will be judged. By the time you start, everyone should be clear on the goals and have had a say in setting them. Negotiated success criteria prevent confusion later and stop people pulling in different directions.	Institutional logics	Authorising
#10	Make explicit who the intervention benefits — patients, staff, the service — and communicate the value honestly. People engage when they believe the change is worth doing and relevant to their own work; understanding the advantage it confers builds willingness and ownership.	Institutional logics	Relational
#11	Keep leadership hands-on and visible to sustain commitment. Implementation does not end at launch: keep people informed, answer questions, recognise effort, and maintain motivation. Without ongoing attention from leaders, momentum fades and people return to old habits.	Interaction dynamics	Authorising

Stage 4 · Enable action

Carried mainly by operational and relational leadership

Implementation follows empowerment. People can only enact the practice bundle — without excessive burden or risk — when their skills, workload and capacity, relationships, communication, and organisational support are aligned. This stage stabilises both interactional capacity and resource sufficiency.

#	What to do	Target	Lead
#12	Make sure the intervention works without destabilising other core activities. Design the new practice to fit alongside what people already do; keep changes to existing processes minimal. The less disruption you create, the less resistance you will face.	Intervention components	Operational
#13	Establish trust, reliability, and protection through relationships and collaboration. Trust is built by being honest about challenges, following through on commitments, and treating people fairly. Without it, people protect themselves and implementation stalls.	Interaction dynamics	Relational
#14	Provide the skills, training, and tools people actually need to perform the new practice — and	Rules & resources	Operational

	the ongoing support to answer questions and solve problems afterwards. Training alone is not enough.		
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Stage 5 · Work through the learning loop

Carried mainly by process and relational leadership

Sustainability rests on learning: monitoring, feedback, and structured appraisal. Over time, iteratively simplify and refine delivery so that only the workable and useful elements persist.

#	What to do	Target	Lead
#15	Track participation, fidelity, and outcomes. Three questions: is the new practice being used? Are people using it correctly? Is it making a difference? Data on these supports early identification of problems and timely adjustment.	Rules & resources	Process
#16	Use planned, organised, structured channels to interpret the data and reflect on staff and patient experience together. Meet regularly to discuss what is working, what is not, and what needs to change. Frontline staff see problems first.	Rules & resources	Process
#17	Keep reactive and informal channels open too: conversations, email routes, and casual check-ins with implementation leaders — not just surveys and meetings. When people know feedback is genuinely wanted and acted on, they trust leadership more and take ownership.	Interaction dynamics	Relational
#18	Revise workflows and components based on what is learned. Staff feedback can streamline tasks and make the intervention more practical. Implementation works better when it is shaped by the people doing the work, not just by leaders and designers.	Intervention components	Process

Stage 6 · Assess normalisation

Carried by operational, process, and authorising leadership

Implementation has succeeded when the practice is routinely incorporated into everyday work. Changes to roles, policies, and evaluation systems ensure the practice bundle is institutionally embedded and no longer dependent on individual enthusiasm and temporary mobilisation. Monitoring remains central to understanding progress.

#	What to do	Target	Lead
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#19	Train staff to collect, interpret, and use implementation data themselves. Equipping staff with evaluation tools and techniques produces more robust judgements about what is working, and fosters a culture of accountability and continuous improvement.	Rules & resources	Operational
#20	Update team structures and role descriptions to reflect the new way of working. Do not keep old structures that no longer fit; create clear reporting lines and handoffs. When structures match the new workflows, the change is more likely to stick.	Rules & resources	Process
#21	Revise policies, guidelines, and governance so the change is institutionally embedded — official policy, not a project that can be dropped. Embed it in hiring, training, and performance assessment. Without this, the new practice disappears when the project ends.	Rules & resources	Authorising
#22	Define what counts as successful normalisation — and for whom. Return to the success criteria you agreed under #9: clear evaluation metrics let you assess progress, identify gaps, and confirm that the intervention really has become part of routine practice.	Institutional logics	Authorising

Twelve questions to rate at every implementation meeting

Practice bundle	Are the tools, tasks, and procedures stable and deliverable in real workflows?
	Are the required changes in relationships and communication understood and supported?
	Are time, training, infrastructure, and governance visibly resourced — not running on hidden work?
	Do staff regard the change as legitimate, good practice worth sustaining?
Implementation strategies	Is there a current plan with clear roles, decision rules, and escalation routes?
	Has the intervention been adapted to this setting without losing its core components?
	Do staff understand the value of the change and agree what success looks like?

	Do people have the skills, tools, and protected capacity to do the new work safely?
Leadership alignment	Is operational leadership keeping the practice technically workable?
	Is relational leadership maintaining trust, confidence, and commitment?
	Is process leadership protecting time, funding, and accountability?
	Is authorising leadership sustaining legitimacy and telling the story of why this matters?

Quick-start checklist

Before moving past each stage, confirm:

1. Mobilisation	A written plan exists, built with the people who must deliver it; every element has a named owner with real authority; resources are secured, not promised; organisational readiness has been checked; escalation routes are agreed.
2. Fit-to-setting	Fixed and adaptable components are distinguished; workflow disruption is mapped, not assumed; champions are appointed with protected time and real authority; the main barriers to staff and patient engagement have been addressed.
3. Staff participation	Staff can say in their own words how this improves practice and who benefits; success criteria are negotiated, agreed, and written down; leadership remains visible and hands-on.
4. Enable action	Training is delivered, not just planned — with ongoing support behind it; workload impact is managed; the change is not destabilising other core activities; trust within the team is holding.
5. Learning loop	Participation, fidelity, and outcomes are tracked; structured and informal feedback channels are both working; at least one refinement based on staff feedback has been made.
6. Normalisation	Roles, team structures, policies, and governance reflect the new practice; staff can collect and use implementation data themselves; you have defined — and checked against the criteria agreed under #9 — what counts as ‘routine’, and for whom.

Six ways implementation goes wrong — and where SPRINT catches them

The failure pattern	Where SPRINT addresses it
'Roll-out first, governance later.' Technical deployment begins before ownership, decision rules, and resources are settled.	Stage 1 — Mobilisation. SPRINT requires the plan, roles, resources, and escalation routes before anything goes live.
One-size-fits-all delivery. The intervention is dropped into a setting unchanged, conflicts with existing workflows, and generates workaround labour.	Stage 2 — Fit-to-setting. Distinguish what can adapt from what must not, and plan for the disruption you will cause.
Assumed buy-in. Leaders believe the case for change is obvious; staff quietly disagree and disengage.	Stage 3 — Staff participation. Build shared understanding of value and negotiate what success means.
Unfunded enthusiasm. The change runs on goodwill, unprotected time, and hidden work — then collapses when key people burn out or move on.	Stage 4 — Enable action, plus process leadership throughout. Resource the work visibly and protect capacity.
Flying blind. Nobody is tracking whether the practice is actually being used, faithfully, with what results — so problems surface late and big.	Stage 5 — The learning loop. Monitor, feed back, reflect, and refine on a planned cycle.
The permanent pilot. The practice works but never stops being a project: it lives in project plans and champions' heads, not in roles, policies, and systems.	Stage 6 — Normalisation. Embed the change institutionally and confirm it has genuinely become routine.

A final word

No framework can predict or solve every implementation problem. What SPRINT offers is structure under pressure: a way to make implementation work visible, sequenced, owned, and accountable — while keeping the adaptive flexibility that complex services demand. If you take one thing from this guide, take this: before you advance, check that the stage you are standing on can bear the weight.

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ONLINE SUPPLEMENTARY DOCUMENTATION

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ONLINE SUPPLEMENTARY DOCUMENTATION: Table A. Abridged taxonomy of staged implementation models

Active Implementation Frameworks [19]	AIFS frames implementation as moving through four functional stages — (i) Exploration, (ii) Installation, (iii) Initial Implementation and (iv) Full Implementation — underpinned by “implementation drivers” (competency, organisational and leadership supports) and improvement cycles.
Knowledge-to-Action [20]	A knowledge-translation framework that separates knowledge creation (a funnel running from inquiry through synthesis to tools and products) from knowledge action. The Action Cycle is a set of iterative, mutually influencing phases: (i) identify the problem and select knowledge; (ii) adapt it to the local context; (iii) assess barriers and facilitators; (iv) select, tailor and implement interventions; (v) monitor use; (vi) evaluate outcomes; and sustain use.
Stetler Model [21]	A practitioner-oriented model of research utilisation that focuses on how an individual clinician or team critically applies evidence to practice. It has five phases: (i) Preparation, (ii) Validation, (iii) Comparative evaluation and decision-making, (iv) Translation/application and Evaluation
Quality Implementation Framework [22]	A four phase model: (i) initial considerations about the host setting (needs and fit assessment, capacity-building, buy-in, adaptation); (ii) creating a structure for implementation (teams and plans); (iii) sustaining that structure during implementation (technical assistance, supervision, feedback, problem-solving); and (iv) improving future applications by learning from experience.
Replicating Effective Programs [23]	A framework originating in CDC HIV-prevention work and later adapted for health services, concerned with packaging evidence-based interventions for real-world delivery. Its four phases are (i) Pre-conditions (identifying need, intervention and barriers), (ii) Pre-implementation (packaging the intervention, training, stakeholder input), (iii) Implementation (delivery with technical assistance and feedback) and (iv) Maintenance & evolution (sustaining and re-customising the intervention over time).
Ottawa Model of Research Use [24]	An interactive, systems-oriented model in which research use depends on assessing three elements: (i) the practice environment, (ii) the potential adopters, and (iii) the evidence-based innovation — for their barriers and supports; selecting and tailoring implementation interventions accordingly; monitoring those interventions and the degree of use; and evaluating outcomes for patients, practitioners and the system.
Iowa Model of Evidence-Based Practice [25]	A clinically grounded, decision-tree process model developed in nursing. It begins with a triggering issue or opportunity and moves through forming a team and appraising and synthesising the evidence to piloting, then integrating and sustaining the change and disseminating results. Its distinctive feature is a series of explicit decision points — for example, “Is this topic a priority?” and “Is there sufficient evidence?” — that loop the user back when criteria are not met.
Intervention Mapping [26]	A systematic protocol, originating in health promotion, for developing theory- and evidence-based interventions together with their implementation. Its six steps run from (i) a logic model of the problem (needs assessment), through (ii) programme outcomes and change objectives, programme design and production, (iii) to an implementation plan addressing adoption, implementation and maintenance, and finally (iv) an evaluation plan.
Getting To Outcomes [27]	An accountability and capacity-building framework that turns planning, implementation and evaluation into ten questions a programme must answer: needs and resources; goals; evidence-based practices; fit; capacities; planning; process evaluation; outcome evaluation; continuous quality improvement; and sustainability. Its purpose is as much to build practitioners’ capacity to achieve and demonstrate results as to sequence the work.
PRECEDE-PROCEED [28]	A comprehensive, ecological model for planning and evaluating health-promotion programmes. The PRECEDE phases work backwards from desired outcomes through successive assessments — social; epidemiological, behavioural and environmental; educational and ecological; and administrative and policy — to design the intervention; the PROCEED phases then cover implementation followed by a cascade of process, impact and outcome evaluation.
Pronovost’s 4 E’s [29]	A pragmatic model for large-scale knowledge translation drawn from patient safety and quality improvement (developed around the work on central-line infections). For each evidence-based practice it applies four stages: (i) Engage (convey why it matters), (ii) Educate (share the evidence), (iii) Execute (implement using human-factors principles such as standardising and building in redundancy) and (iv) Evaluate (measure performance and feed it back).

ONLINE SUPPLEMENTARY DOCUMENTATION: Table B. How SPRINT Implementation Pathway fits with staged models of implementation

Staged model (primary citation)	Mobilisation (#1–3)	Fit-to-setting (#4–7)	Ensure staff participation (#8–11)	Enable action (#12–14)	Learning loop (#15–18)	Normalisation (#19–22)
Active Implementation Framework [19]	Installation	Installation	Installation to initial Implementation	Initial Implementation	Initial to full Implementation	Full Implementation
Knowledge-to-Action [20]	Adapt knowledge to local context	Adapt to context; assess barriers and facilitators	Select, tailor, and implement	Select, tailor, and implement	Monitor knowledge use and evaluate outcomes	Sustain knowledge use
Quality Implementation Framework [22]	Creating structure	Initial considerations (fit, adaptation)	Initial considerations	Structure and ongoing support	Ongoing structure (feedback)	Improving future applications
Replicating Effective Programs [23]	Pre-implementation	Pre-implementation	Pre-implementation	Implementation	Implementation	Maintenance and evolution
Stetler Model [21]	Preparation	Validation to comparative evaluation	Comparative evaluation / decision-making	Translation / application	Evaluation	Translation / application (no distinct sustainment)
Ottawa Model of Research Use [24]	Assess innovation; select interventions	Assess barriers & supports (environment, adopters)	Assess adopters and tailor interventions	Implement and monitor degree of use	Monitor use and evaluate outcomes	Sustained use (outcome)
Iowa Model of EBP [25]	Form team and state purpose and priority	Design and pilot the practice change	Engage team and stakeholders	Pilot the change	Evaluate and appraise (pilot)	Integrate, sustain and disseminate
Intervention Mapping [26]	Implementation plan (adoption)	Needs assessment and design	Adoption objectives	Implementation	Evaluation plan	Maintenance
Getting To Outcomes [27]	Goals and plan	Needs plus resources and fit	Capacities	Plan & capacities	Process and outcome evaluation	Sustainability
PRECEDE-PROCEED [28]	Administrative & policy	Assessment	Educational & ecological	Implementation	Process evaluation	Impact and outcome evaluation
Pronovost's 4 E's [29]	Engage	Engage and Execute local design	Engage; Educate	Educate; Execute	Evaluate	Evaluate

ONLINE SUPPLEMENTARY DOCUMENTATION: Table C. Abridged taxonomy of implementation science

Conceptualisation	Description	Nilsen Categorisation [148]
Behaviour Change Wheel [125]	The Behaviour Change Wheel (BCW) is a framework that provides a systematic approach to intervention design for individual behaviour change interventions and for implementing related health policies or organisational changes.	Determinant Framework
Diffusion of Service Innovations [126]	The Diffusion of Service Innovations model builds on diffusion of innovations theory [149] by exploring factors that promote the diffusion and sustainability of innovations in health services. Its relevance to implementation science is in providing a comprehensive framework to guide the successful implementation and scaling of healthcare innovations.	Determinant Framework
Consolidated Framework for Implementation Research [50]	The Consolidated Framework for Implementation Research builds on the Diffusion of Service Innovations model [126]. It organises implementation into a taxonomy of activities in five constructs to assess implementation contexts. Its relevance to implementation science lies in identifying factors affecting implementation success.	Determinant Framework
Exploration, Preparation, Implementation, and Sustainment framework [121]	The Exploration, Preparation, Implementation, and Sustainment framework is a staged approach to guiding the implementation of evidence-based practices. Developed for the US Veterans' Administration, its structured approach makes it useful understanding and managing the lifecycle of intervention implementation.	Process Model
Normalisation Process	Normalisation Process Theory explains mechanisms that motivate and	Implementation Theory

theories, models, and frameworks

Theory [7]	shape implementation processes. It shows how new practices become embedded and routinised in practice.	
Practical, Robust Implementation and Sustainability Model [127]	Practical, Robust Implementation and Sustainability Model provides a model of process, evaluation, and determinants focusing on interactions between interventions and a range of stakeholders.	Determinant Framework
Promoting Action on Research Implementation in Health Services Framework [128]	The Promoting Action on Research Implementation in Health Services Framework proposes that successful implementation depends on the interplay of evidence, context, and facilitation. It emphasises the importance of facilitation in implementation processes, and provides a heuristic for understanding and promoting the uptake of evidence-based practices in healthcare settings.	Determinant Framework
Theoretical Domains Framework [129]	The Theoretical Constructs Framework synthesises constructs from multiple psychological theories into 14 constructs to understand behaviour change. Its relevance to implementation science is in providing a comprehensive approach to identify barriers and facilitators to implementing new practices or interventions.	Determinant Framework
Theory of Organisational Readiness for Change [130]	The Theory of Organisational Readiness for Change proposes that organisational change success depends on members' commitment and efficacy to implement change. Its relevance to implementation science is in assessing an organisation's preparedness for adopting and executing novel interventions and innovations in organisational deliver of care.	Implementation Theory

ONLINE SUPPLEMENTARY DOCUMENTATION: Table D. SPRINT Implementation Strategies linked to key constructs in included theories, models, and frameworks

SPRINT Implementation Strategies	Behaviour Change Wheel [125]	Diffusion of Service Innovations [126]	Consolidated Framework for Implementation Research [50]	Exploration, Preparation, Implementation, and Sustainment framework [121]	Normalisation Process Theory [7]	Practical, Robust Implementation and Sustainability Model [127]	Promoting Action on Research Implementation in Health Services Framework [128]	Theoretical Domains Framework [129]	Theory of Organisational Readiness for Change [130]
<i>#1 Develop a formal implementation plan.</i>	Intervention design should include stakeholder involvement to identify behavioural targets and intervention functions.	The framework highlights the role of networks, champions, and boundary spanners, in supporting innovation planning.	The 'implementation process' construct includes planning and engaging stakeholders in implementation.	The 'Preparation' construct includes creating collaborative partnerships with key stakeholders to develop implementation plans.	Constructs of 'strategic intention' and 'organisational framing' underpin implementation planning.	Collaboration supports implementation infrastructure by establishing clear communication channels and decision-making processes.	Collaboration between stakeholders provides the foundation for implementation success.	Constructs of 'social influences' and 'social and professional role and identity' stress the importance of collaboration.	'Organisational readiness' emphasises the importance of shared resolve and collective efficacy for coordinated action.
<i>#2 Define who is responsible for each element of implementation and with what authority.</i>	Interventions can be adapted to address local physical, social, and motivational barriers.	'Adaptation' and 'reinvention' point to innovation-system fit and flexibility in adapting the 'soft periphery' of interventions.	'Adaptability' construct within the 'intervention characteristics' construct calls for of tailoring of interventions to fit local contexts.	'Adaptation' construct addresses balancing fidelity and flexibility to ensure interventions fit local contexts.	Constructs like 'adaptive execution' and 'reframing organisational logic' focus on aligning interventions with contexts.	'Adaptation' increases intervention relevance, feasibility, and fit to context.	Adaptation is addressed through the 'context' construct, and supports readiness for change through intervention tailoring.	'Environmental context' and 'beliefs about capabilities' constructs focus on adapting interventions to contextual constraints.	Contextual factors, such as resource availability and situational demands, are central to change efficacy judgments.
<i>#3 Identify and secure the required resources.</i>	Modifying the 'opportunity' of the intervention aims to align stakeholder input to workflows with the intervention.	Engaging stakeholders through communications and influence mechanisms facilitates integration.	The 'engagement' construct within the 'process' construct focuses on key stakeholders integrating the intervention into workflows.	Stakeholder engagement identified in 'Exploration' and 'Preparation' constructs integrates interventions into existing workflows.	'Cognitive participation' construct highlights stakeholder engagement to ensure integration into workflows.	This strategy ensures that the intervention does not disrupt daily operations but rather becomes part of the routine and adds to existing workflows.	The 'facilitation' construct highlights the effect of facilitators in effectively translating interventions into workflows.	'Social Influences' and 'Environmental Context and Resources' constructs emphasise stakeholder engagement to align with existing workflows.	Social interactions and consistent leadership messages are critical for fostering stakeholder buy-in.
<i>#4 Systematically identify which elements can be adapted and how to preserve core components.</i>	The 'opportunity' construct reflect contextual features, such as the physical environment and social structures,	Organisational readiness shapes resource allocation, and leadership, which influence successful	'Inner setting' and 'outer setting' effects shape readiness for implementation.	'inner' and 'outer' contexts during the identify organisational readiness and external factors	Concept of 'organisational reframing' capacity' and addresses supportive features of the	Fits 'External Environment' construct.	The 'context' construct focuses on culture and leadership, identifying features that facilitate or	The 'environmental context and resources' construct explicitly addresses the identification of supportive features and barriers in the	Organisational readiness hinges on situational factors that promote or inhibit implementation.

	that shape implementation.	implementation.		that facilitate implementation.	target environment.		hinder implementation.	target setting.	
<i>#5 Understand how the intervention will disrupt pathways, routines, and workflows.</i>	Helps articulate how specific interventions address gaps or inefficiencies in current practices.	Relative advantage is a critical attribute in the adoption process, with clear evidence linking perceived effectiveness or efficiency to success.	The 'relative advantage' construct focuses on the perceived benefits of the intervention compared with current practices.	The 'exploration' construct focuses on building awareness of the innovation's advantages, and to communicate how it improves existing practices.	Constructs like 'internalisation' focus on understanding and communicating value and potential benefits to individuals.	Marketing the intervention internally is central - showcasing intervention clinical and cost effectiveness.	The 'evidence' construct links together research rigor, clinical expertise, and patient preferences, to emphasise improvement on existing practice.	The 'beliefs about consequences' construct focuses on communicating benefits associated with the intervention.	Change valence (perceived value of change) plays a pivotal role in fostering commitment.
<i>#6 Appoint and resource champions to drive implementation and spread operational knowledge of the intervention.</i>	An iterative and collaborative approach to intervention design supports shared goals amongst stakeholders.	Shared goals are essential, aligning innovation values with adopter needs and organisational goals.	The 'implementation climate' and 'process' constructs address shared vision and agreement on goals through communication and feedback loops.	Shared goal-setting is implicit in the 'Preparation' construct through stakeholder collaboration and planning.	'Communal specification' construct addresses agreement on the purpose and goals of the intervention.	Momentum is maintained through shared goals and a common vision, reducing conflicts and misunderstandings.	Collaboration between facilitators and stakeholders involves establishing shared goals as stakeholders align evidence, context, and facilitation.	The 'goals' construct addresses setting and bring together shared objectives amongst stakeholders.	Shared commitments reflect collective commitment to a clear set of goals.
<i>#7 Identify and address practical and organisational barriers that prevent staff and patients from engaging.</i>	Assumes that roles and responsibilities will be defined, especially when designing interventions involving training, enablement, or modelling.	Roles such as champions, boundary spanners, and change agents are explicitly identified and discussed.	The 'engagement' construct addresses assigning and supporting implementation leaders and champions in shaping and clarifying roles.	Role clarification is emphasised during the 'preparation' and 'implementation' constructs, focusing on training and building teams.	The focus on and 'skill-set workability' supports defining and allocating skills and responsibilities effectively.	Role clarity prevents duplication of efforts, reduces confusion, and ensures accountability. intervention.	The 'facilitation' construct emphasises clarification of roles and responsibilities of facilitators and stakeholders in the implementation process.	The 'social and professional role and identity' construct addresses clear definition and communication of roles and responsibilities.	Clarity in demands and expectations of participant capabilities supports role clarification and delineation.
<i>#8 Show team members how the implementation process improves their practice.</i>	Linking interventions to measurable behaviour change mechanisms, this can provide evidence-based justifications for their value,	The concept of 'relative advantage' helps clarify the intervention's value by linking it to individual and organisational priorities.	The 'knowledge and beliefs about the intervention' construct under 'characteristics of individuals' reflects the importance of understanding intervention	The 'exploration' construct attends to understanding staff perceptions of the value of the intervention to ensure buy-in.	Participants need to understand the intervention's relevance and fit with their work, highlighting its value.	When staff see its personal value, they are more likely to champion the intervention, enhancing its sustainability.	Ensuring stakeholder engagement ensures that the value of the intervention is communicated and understood by staff.	'Beliefs about consequences' and 'motivation and goals' constructs reflect the importance of communicating the intervention's value to staff.	Change valence highlights the importance of fostering commitment through communicating perceived benefits.

	which can be communicated to staff.		value.						
<i>#9 Agree what success looks like and how it will be judged.</i>	N/A	Influence of champions and opinion leaders is shown to significantly impact adoption.	Champions and opinion leaders can drive implementation efforts.	The 'preparation' construct highlights the importance of identifying and supporting champions and leaders to promote implementation.	'Cognitive participation' includes subconstructs like 'initiation' and 'activation,' which focus on engaging leaders and champions.	Champions or leaders can become the backbone of the implementation infrastructure, driving change and overcoming resistance.	The 'facilitation' construct emphasises the importance of skilled facilitators and internal champions who lead and sustain implementation.	The 'social influences' construct includes the identification of champions or opinion leaders who can drive the intervention forward.	Leadership and opinion leaders are crucial for aligning organisational efforts.
<i>#10 Make explicit how the intervention benefits patients and other service users.</i>	The enablement construct addresses barriers to capability and opportunity, ensuring participation is feasible.	The framework discusses reducing barriers and perceived complexity to promote adoption.	Constructs such as 'available resources' and 'access to knowledge and information' under 'inner setting' all address barriers to participation.	The 'preparation' and 'implementation' construct focus on addressing barriers, including logistical and organisational challenges.	'Interactional workability' under 'collective action' addresses the problem solving around participation.	Actively removing or minimising operational barriers so that interventions become more amenable to change.	The facilitator's role involves identifying and mitigating barriers to ensure smooth participation in the process.	The 'environmental context' and 'resources' constructs focuses on identifying sites of barriers to participation.	Situational factors, including resource gaps, need to be addressed to improve readiness.
<i>#11 Maintain hands-on leadership and oversight to sustain commitment.</i>	N/A	Ongoing feedback, communication, and reinforcement mechanisms support intervention implementation.	The 'learning climate' construct emphasises creating an environment where team members feel their knowledge and skills are valued and supported.	Strategies to sustain commitment are addressed in the 'sustainment' construct.	Constructs like 'communal specification', 'activation' and 'relational restructuring' link to strategies to keep teams engaged over time.	This strategy focuses on the human aspect of implementation, ensuring that the team remains engaged over the long term.	The 'facilitation' construct links to strategies to sustain motivation and engagement through ongoing support and leadership.	The 'reinforcement and goals' construct focuses on strategies to sustain motivation and commitment among team members.	Commitment is maintained through consistent leadership actions and shared efficacy.
<i>#12 Ensure the intervention works without destabilising other core activities.</i>	Interventions should be designed around existing environmental and social opportunities, aiming to minimise disruption.	The implementation process should be designed to minimise disruption through careful planning and adaptation.	The 'complexity' and 'compatibility' constructs address the alignment of interventions align with existing workflows.	The model emphasises compatibility with existing workflows, particularly within the 'preparation' and 'implementation' constructs.	'Contextual integration' and 'interactional workability' focus attention on embedding interventions into existing practices.	Important to ensure that the intervention adds value without overwhelming staff or systems.	The framework's emphasis on 'contextual alignment' ensures minimal disruption while embedding the intervention into existing practices.	The 'environmental context' and 'resources and behavioural regulation' constructs address seamless integration with existing activities.	Effective coordination ensures minimal disruption during implementation.
<i>#13 Establish trust,</i>	N/A	N/A	'Inner setting,'	N/A	'Relational	Operational	Facilitation	The 'social	Cooperative

<i>reliability, and protection through relationships and collaboration.</i>			and 'networks and communications' and 'implementation climate,' constructs support fostering trust and collaboration.		integration' and 'normative restructuring' constructs address relationships and trust within teams.	supports for the infrastructure ensure that team members can work through challenges together.	includes interpersonal skills that ensure trust and positive relationships within teams.	influences' construct emphasises the role of trust, norms, and relationships in fostering team collaboration.	behaviour is an outcome of positive approaches readiness.
<i>#14 Provide the skills, training, and tools required to perform the new practice.</i>	The training function explicitly targets the development of necessary skills to increase capability for implementation.	Training and technical support are key components of the 'augmented product' construct.	The 'knowledge and beliefs about the intervention' construct highlights the importance of staff training and skill development.	The 'Preparation' and 'Implementation' constructs emphasise training and capacity building to ensure staff readiness.	'Skill-set workability' ensures that interventions align with staff capabilities and training.	Ensuring staff are competent not only supports the intervention's execution but also builds a learning culture within the organisation.	The facilitator's role may include capacity building and training that ensures staff have the necessary skills.	The 'skills' construct explicitly focuses on the training and capacity building required for effective implementation.	Collective efficacy depends on confidence in shared capabilities.
<i>#15 Track participation, fidelity, and outcomes.</i>	The framework supports continuous evaluation, with interventions designed to measure behavioural outcomes.	Feedback loops and monitoring mechanisms are essential for iterative refinement.	The 'reflecting and evaluating' construct within the 'process' construct points to tracking progress and using data to refine implementation.	The 'implementation' and 'sustainment' constructs emphasise the value of monitoring and evaluation track outcomes.	The 'reflexive monitoring' construct focuses attention on systematic evaluation and feedback mechanisms.	This involves setting up metrics, dashboards, or regular reporting mechanisms to monitor how the intervention is performing against its goals.	The 'context' construct includes mechanisms for evaluation and feedback.	The 'behavioural regulation' and 'goals' constructs address monitoring and evaluation.	Evaluation ensures effective implementation and iterative refinement.
<i>#16 Use planned, organised, and structured channels to interpret data and reflect on stakeholder experiences.</i>	Iterative refinement enables feedback and adaptation of interventions to improve outcomes.	The framework supports ongoing learning and adaptation as key to sustaining innovation.	'Reflecting and evaluating' supports refinement and improvement over time.	The 'sustainment' construct include mechanisms for ongoing learning from and refinement of interventions.	Iterative refinement is emphasised through 'reconfiguration,' a component of the 'reflexive monitoring' construct.	This strategy ensures that the implementation process evolves, adapting to new knowledge or changing conditions.	Facilitation supports iterative improvement through feedback and adaptation, ensuring ongoing refinement.	The 'reinforcement' construct includes mechanisms for ongoing improvement of processes.	Iterative processes align with the theory's focus on adaptive capacity.
<i>#17 Provide channels for reactive and informal reporting of risks and problem solving.</i>	N/A	N/A	The 'learning climate' construct supports environments where staff feel safe to provide	Feedback loops are central to the 'Implementation' and 'Sustainment' constructs promoting	'Communal appraisal' and 'reconfiguration' highlight the value of collective and iterative	This fosters a culture where staff feel heard and valued, which is key to ongoing staff morale.	Feedback loops are central to facilitation, creating an environment where	The 'social influences' construct can be applied to create environments where staff feel	Feedback loops are essential for maintaining shared commitment.

			feedback.	iterative refinement and stakeholder input.	feedback processes.		stakeholders feel safe to express concerns.	comfortable providing feedback.	
<i>#18 Revise workflows and components based on what is learned.</i>	Modifications and revisions based on feedback and evolving contextual needs shape improvements in implementation.	Iterative refinement based on feedback is central to the model.	The 'reflecting and evaluating' construct proposes that feedback is used to adapt implementation strategies.	Iterative refinement, informed by feedback, is emphasised in the 'Implementation' and 'sustainment' constructs.	The 'reconfiguration' constructs ensures that feedback informs modifications to the interventions and implementation process.	Acting on feedback shows responsiveness and adaptability. These are key traits of a sustainable implementation programme.	The iterative nature of the facilitation process incorporates staff feedback to revise and improve implementation strategies.	The 'behavioural regulation and reinforcement' constructs emphasise iterative adjustments based on feedback.	Adaptive learning strengthens readiness over time.
<i>#19 Train staff to collect, interpret, and use implementation data.</i>	Training and education ensure staff are equipped to engage with both the intervention and its evaluation.	Training is essential for adoption and sustainability.	Constructs such as 'characteristics of individuals,' such as 'knowledge and beliefs about the intervention,' support training for evaluation involvement.	The 'implementation' construct includes capacity building and training staff to engage in evaluation processes.	Training and skill development are supported under 'skill-set workability' and 'reflexive monitoring' constructs.	This engagement can lead to more nuanced insights, supporting both immediate adjustments and long-term sustainability.	Facilitation includes training and education, equipping staff to engage in evaluation and continuous improvement.	The Skills and Knowledge constructs directly address training needs to enable staff participation in evaluation.	Shared understanding enhances collective confidence in evaluation processes.
<i>#20 Update team structures to reflect the new way of working.</i>	The framework recognises the importance of environmental restructuring, which includes modifying organisational structures to support change.	The emphasis on organisational adaptation includes structural changes to support innovations.	Constructs like 'structural characteristics' and 'networks and communications' within 'inner setting' address adapting team structures.	The 'Sustainment' construct addresses adjustments to team structures to ensure long-term alignment with the intervention.	'Relational restructuring' emphasises how implementation reshapes team structures and interactions.	As the intervention changes workflows or roles, team structures need to evolve.	The framework emphasises contextual changes, including adapting structures to support new practices.	The Environmental Context and Resources and Social/Professional Role and Identity constructs focus on adapting team structures to support changes.	Effective coordination reflects structural alignment with new processes.
<i>#21 Revise policies, guidelines, and governance to support embedding the intervention.</i>	Constructs explicitly focus on creating supportive guidelines, regulations, and organisational changes.	Policy alignment is included in the outer context of innovation diffusion.	The 'external policies and incentives' construct supports modification of organisational policies to fit intervention goals.	The 'sustainment' construct emphasises institutionalising changes through updated policies and procedures.	Constructs under 'normative restructuring' address changes to rules and norms governing organisational practices.	Policy updates might relate to new standards, procedures, or even cultural shifts within the organisation.	Revision of policies and guidelines can be used to institutionalise changes.	The 'environmental context and resources' construct supports updating policies to embed changes.	Policy alignment enhances organisational capacity and readiness.
<i>#22 Define what counts as successful normalisation, and</i>	Success is measured by linking interventions to	Success is linked to measurable outcomes such as adoption,	The 'reflecting and evaluating' construct calls for clear metrics and	Clear metrics for are needed to determine success,	Constructs like 'systematisation' under reflexive monitoring and	Success criteria should be agreed upon from the start, involving both	The evaluation mechanisms in the 'context' construct ensure	The 'beliefs about consequences and goals' constructs address defining	Implementation effectiveness serves as a proximal

<i>for whom.</i>	specific, observable outcomes.	assimilation, and sustained use.	evaluation criteria to determine success.	emphasising the importance of defining and evaluating implementation outcomes in all constructs.	'sustainment' emphasise defining and evaluating success criteria.	quantitative and qualitative data.	clear criteria for success are defined and measured.	success criteria and evaluating outcomes.	indicator of success.
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ONLINE SUPPLEMENTARY DOCUMENTATION: Table E. Compatibility of SPRINT with NIH and MRC complex intervention models.

Conceptual Progression	NIH Stage Model [139, 140]	MRC Complex Intervention Framework [17]	SPRINT Implementation Pathway	Primary Focus of Work
Early Development	Stage I: Intervention Generation, Refinement & Pilot Testing	Development	Mobilisation (Strategies #1–3) plus early Fit-to-setting (Strategies #4–5)	Specify intervention components; clarify mechanisms; establish governance, roles, authority, and decision rules; identify fixed vs adaptable elements.
Feasibility & Piloting	Late Stage I	Feasibility and Piloting	Fit-to-setting (Strategies #4–7) plus Coherence & Buy-in (Strategies #8–11)	Test workflow integration; appoint champions; remove organisational barriers; define success criteria; build shared understanding of value.
Efficacy / Controlled Evaluation	Stage II: Traditional Efficacy Testing	Early Evaluation	Mobilisation (reinforced) plus staff participation (Strategies #8–11) plus early Learning Loop (Strategy #15)	Stabilise protocol delivery; ensure fidelity; specify outcomes; maintain leadership oversight; begin structured monitoring.
Pragmatic Evaluation	Stage III: Efficacy with Real-World Providers	Evaluation (mechanism and process analysis)	Enable Action (Strategies #12–14) plus Learning Loop (Strategies #15–18)	Align skills, workload, and workflows; monitor participation and fidelity; structured reflection; iterative refinement.
Effectiveness in Routine Conditions	Stage IV: Effectiveness Research	Late Evaluation and Implementation	Learning Loop (Strategies #15–18) plus early Normalization (Strategies 19–22)	Assess generalisability; adapt delivery under real-world constraints; stabilise institutional supports; embed monitoring.
Scale-Up & Sustainability	Stage V: Dissemination and Implementation Research	Implementation and Long-Term Monitoring	Normalisation (Strategies #19–22) plus ongoing Learning Loop (Strategies #15–18)	Institutional embedding; revise policies and governance; update team structures; define routinisation criteria; ensure sustainability and equity monitoring.

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