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**Research design and data systems for measuring implementation success in real-world contexts**

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**Objectives/aims**

We describe a framework for investigating implementation success within complex service delivery systems. By defining implementation as in intervention itself within a complex system, we demonstrate an approach to model implementation as a multilevel, sequential decision process, causally linking implementation, client and system outcomes. We further discuss modern database designs for implementing this approach in real-world contexts using flexible multipurpose data systems that support operational as well as research domains and emphasise a culture of continuous quality improvement.

**Methods**

We demonstrate our approach to modelling implementation systems using simulated case studies based on empirical studies recently published in the implementation and child welfare literature. We also present recent developments in relation to data systems as part of evaluation projects in service delivery systems. Finally, we provide practical examples of the design and implementation of different flexible data systems and their integration for research and operational purposes.

**Main findings**

Implementation success is comprised of implementation outcomes, client outcomes and system outcomes. Our framework of causal inference in implementation systems enables us to investigate the pathways through which implementation works within the system and which elements drive implementation success at different levels. The flexible database designs introduced as part of our concept represent multipurpose data systems tailored to accommodate the requirements of diverse stakeholder groups across the implementation system to support a culture of continuous practice improvement.