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Cross-Sectoral Learning in Implementation Research

Harnessing the potential to accelerate results for children

Jane Lewis, Robyn Mildon and Tom Steele

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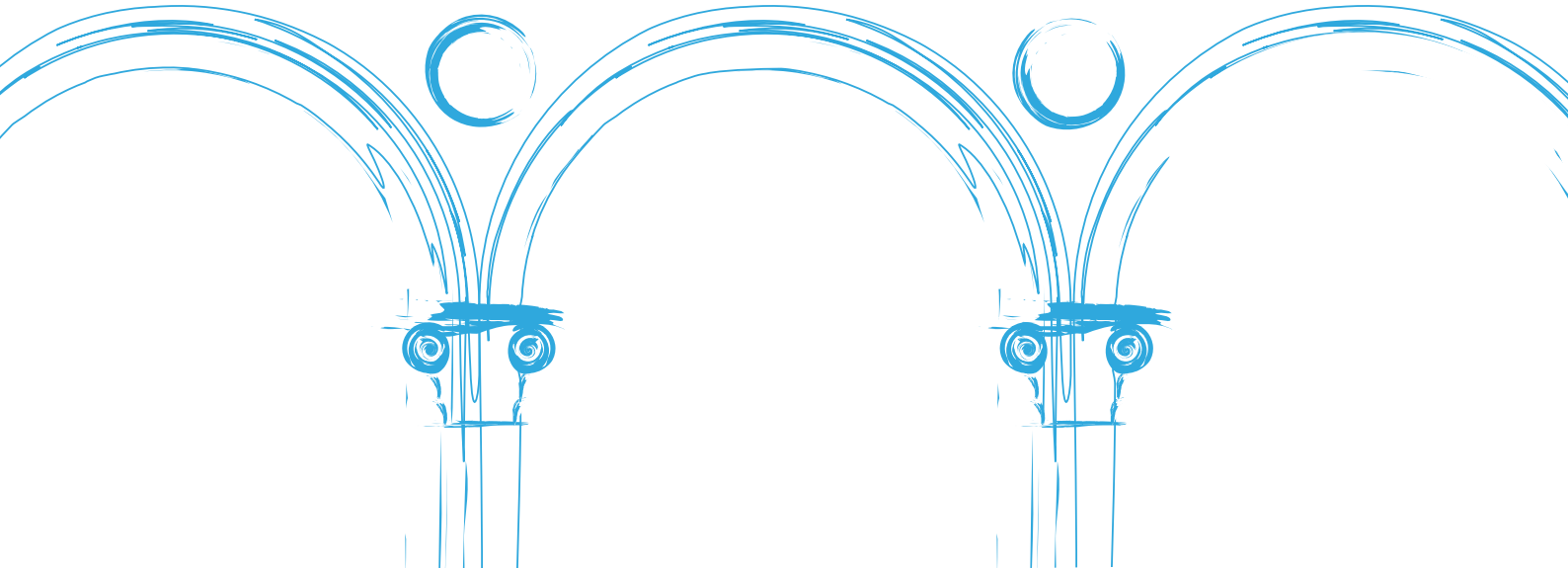

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Correspondence should be addressed to:

UNICEF Office of Research – Innocenti
Via degli Alfani 58
50121 Florence, Italy
Tel: (+39) 055 20330
Fax: (+39) 055 2033 220
florence@unicef.org
www.unicef-irc.org
@UNICEFInnocenti on Twitter, LinkedIn, Facebook, Instagram and Youtube

CROSS-SECTORAL LEARNING IN IMPLEMENTATION RESEARCH: HARNESSING THE POTENTIAL TO ACCELERATE RESULTS FOR CHILDREN

Authors
Jane Lewis, Robyn Mildon and Tom Steele, Centre for Evidence and Implementation

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Introduction

This paper has been prepared by the Centre for Evidence and Implementation[1] on behalf of UNICEF, to provide background for participants in the workshop '*Cross-sectoral Learning in Implementation Research: Harnessing the potential to accelerate results for children'* in January 2022. The paper aims to promote a shared understanding of implementation research (IR) and its relevance to UNICEF's work.

The emergence and growth of the field of IR holds great promise for increasing the likelihood of evidence-based interventions, programmes and policies being successful and accelerating the achievement of the goals of UNICEF's work. IR is focused on understanding how evidence, research findings and effective policies, practices and programmes can best be promoted, implemented, sustained and scaled in real world service settings. It aims to bridge the '*know-do gap'* – the chasm between what we know works, and what is actually delivered on the ground.

IR is a multidisciplinary field of inquiry that is highly relevant for UNICEF's programming and systems change goals, across the breadth of UNICEF's work. Since 2015, UNICEF has been collaborating with global development partners, policymakers and researchers to conduct IR studies in over 25 countries, in fields including health, early childhood development, education and social policy.

This paper is intended to set the stage for a collaborative 4-day workshop in January 2022, with invited attendees drawn from across UNICEF's country and regional offices and headquarters teams as well as selected partners from external agencies. The aim of the workshop is to exchange learning from different sectors which have been adopting and experimenting with IR, discuss how to institutionalise IR as a core and continuous part of impactful programming, and develop systematic and inclusive approaches to identifying priorities for IR.

The specific objectives of the workshop are:

- To **build shared understanding of the potential of IR to improve programming**
- To build **understanding of how different sectors** (education, early childhood development, child protection, health, nutrition etc.), across UNICEF offices and more widely, **are adopting or experimenting with IR**, to raise awareness of the applicability of IR across sectors
- To **review and discuss the UNICEF IR 'Roadmap' and the embedding of IR within UNICEF programming** – including identifying key priorities for action
- To **increase and enhance the use of IR** in child rights programming globally

[1] https://www.ceiglobal.org

1. What is implementation research and why does it matter?

The challenge of implementation

Implementation refers to the process of putting interventions (policies, programmes, practices or services) into effect. *Implementation Research* is about understanding that process and how to optimise its effectiveness. It is concerned with why and how interventions work, in real world settings, and how they can made to work better.

Systematic research into implementation is essential because the simplicity of the definition of implementation does not do justice to the complexity of the work involved. Bringing about sustained and effective change – particularly in the under-resourced, complex, volatile and unpredictable contexts in which UNICEF works – is enormously skilful and challenging work. In practice, much implementation fails to achieve its objectives, or to do so in a sustained way and at scale, and the threat of unsuccessful or mis-implementation is a concern among policymakers, systems leaders and service providers the world over. It takes on average 17 years for evidence-based practices to be incorporated into routine healthcare and human services[2], and many – even most – efforts to get a new policy, project, initiative or programme off the ground are disrupted. The impacts of unsuccessful or mis-implementation are "longstanding and persistent—and likely the rule rather than the exception".[3]

The challenges to successful implementation are multiple, including programmes, services and policies not being well adapted to the local context in which they are intended to operate, and contexts lacking the human and financial capacity to support them. Programmes, policies and services can rarely be *'lifted and shifted'* into a new cultural context, political economy or national system without adaptation of the intervention, the setting or both. Local co-creation of programmes and adaptations, local ownership, and south-to-south shared learning are important aids to effective implementation. Combined with other challenges to implementation such as turnover in stakeholders, changing policy agendas and insufficient preparation and planning, this means that IR is a much-needed strategy for improving the effectiveness of implementation.

The promise of implementation research

IR illuminates why and how interventions work in real world settings, and tests approaches to improve implementation.[4] Equally, when implementation fails, it helps to explain why, and to surface and test alternative implementation strategies and approaches. "In this way, IR converts local, context-specific knowledge that is often hidden and tacit into systematic learning that can help [...] systems improve the delivery of policies and programmes."[5]

IR is applied to implementation efforts ranging from small-scale programme pilots to systems transformation, and at phases across the programme cycle from early programme design, to sustaining delivery and achieving outcomes, to transferring across and embedding within systems.

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[2] Balas, E.A. and Boren, S.A., (2000). Managing clinical knowledge for health care improvement. *Yearbook of medical informatics, 9(01), pp.65-70.*

[3] Bauer, M.S. and Kirchner, J., (2020). Implementation science: what is it and why should I care?. *Psychiatry research, 283, p.112376.*

[4] Peters D H, Adam T, Alonge O, Agyepong I A, Tran N. (2013). Implementation research: what it is and how to do it *BMJ 347 :f6753*

[5] Ghaffar, A., Swaminathan, S., Sheikh, K., Al-Mandhari, A., Jhalani, M., Sambo, B. and Jakab, Z., (2020). Implementation research is crucial to countries' efforts to strengthen learning health systems. *Health Policy and Planning, 35(Supplement_2), pp.ii4-ii6.*

IR is centrally focused on the effectiveness of implementation strategies. Clearly the effectiveness of interventions themselves (programmes, services, policies etc.) is also crucial for social impact, and evidence synthesis is an important starting point to identify 'what works', where and how. But effective interventions are not, on their own sufficient. IR needs to be combined with evidence synthesis and with evaluation of outcomes to understand whether and how 'what works' can work 'here', and to help interventions to reach the right people and work as intended, in a sustained way, at scale, if the intended impacts of interventions are to be secured.

IR therefore aims to increase access to effective interventions, and to improve systems, by understanding how interventions and the contexts (at multiple levels) in which they operate can be better aligned. IR is a key approach to supporting cross-country learning. It answers questions such as:

- What is the context this programme will operate in and how will different aspects of the context support, or act as a barrier to, implementation? How can support be harnessed, and barriers tackled?
- What will it take to make the programme work? Which stakeholders need to be involved? What resources need to be mobilised? How do programme components need to be delivered?
- How do different elements of complex, multi-sectoral initiatives need to be sequenced for systems strengthening and to avoid unhelpful systems interactions? Are there inter-system trade-offs, where success in one system is at the expense of another?
- Are we reaching the people and populations we aimed to reach, and how could delivery be adapted to ensure we reach the most marginalised?
- How do we ensure the programme becomes fully integrated into organisations and the wider system so that it is sustained over time?
- Why is the programme working in some settings but not in others?
- How can the programme be scaled up in new communities or countries?

Meaningful partnerships between policymakers, practitioners, communities and researchers, and the ownership of IR by decision-makers, are core to IR. Achieving alignment between interventions (programmes, services and policies) and their operating contexts is a central concern, involving a continuous process of mutual adaptation.[6] IR helps to identify – and to anticipate – bottlenecks in implementation, shedding light on where and why they arise, their implications, and the strategies needed to address them. It can serve a crucial purpose in identifying the optimal entry points for UNICEF in systems, the work needed, and key stakeholders. The insight that IR brings increases the chance of successful outcomes, reduces the risk of wastage and failure, and accelerates programme and system improvement to reduce inequality.

IR has particular potential in low-and middle-income countries (LMICs), given the gap between population needs and resources available, weaknesses in systems and capacity to support change, and the importance of local co-creation and adaptation. Its focus on collaboration and on understanding change (and resistance to change) from the perspective of multiple levels, systems and stakeholders means it is a fundamental tool towards achievement of the Sustainable Development Goals. The last two decades have seen an explosion of IR in LMICs[7] although the fact that it is often led by researchers from high-income countries (HICs) highlights the need to advance IR agendas and capacity building locally and with full government ownership.

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[6] Chambers, D.A., Glasgow, R.E. and Stange, K.C., (2013). The dynamic sustainability framework: addressing the paradox of sustainment amid ongoing change. *Implementation Science, 8(1), pp.1-11.*

[7] Vega, J., Shroff, Z.C., Sheikh, K., Agyepong, I.A., Tilahun, B., Tangcharoensathien, V., Hafeez, A., Bhushan, I., Ghaffar, A. and Peters, D., (2020). Capacity, committed funding and co-production—institutionalizing implementation research in low-and middle-income countries. *Health policy and planning, 35(Supplement_2), pp.ii7-ii8.*

2. Definitions and key features of Implementation Research

There are many definitions of IR, although they call out similar features. UNICEF, as part of the forthcoming strategy document *'Implementation Research at UNICEF: RoadMap 2022-2025'* defines IR as:

> "The **integration of research** within existing program implementation and policy-making to **improve outcomes** and **overcome implementation bottlenecks**."

Other definitions – many reflecting the strong emergence of IR in health systems, although applicable to other systems and sectors – highlight similar features of IR, particularly that it involves systematic inquiry, empirically-informed interventions, embedding in routine practice, and the achievement of social goals. They include:

> "The scientific study of methods to promote the systematic uptake of research findings and other evidence-based practices into routine practice, and, hence, to improve the quality and effectiveness of health services and care."[8]

> "The study of methods to promote the adoption and integration of evidence-based practices, interventions, and policies into routine health care and public health settings to improve the impact on population health."[9]

> "The study of methods to promote the uptake of research findings into routine practice."[10]

> "The scientific inquiry into questions concerning implementation – the act of carrying an intention into effect, which in health research can be policies, programmes, or individual practices (collectively called interventions)."[11]

The workshop will use UNICEF's working definition of IR, but UNICEF will take forward further work to consider whether it needs to be refined, in particular to ensure its appropriateness across UNICEF's sectors.

Despite multiple definitions, there is broad agreement on the key features of IR[12] [13] as summarised in Table 1. These characteristics are not unique to IR – they are features of effective and useable research in other fields too – but together they describe the particular priorities and intentions of IR.

A particular approach strongly endorsed by UNICEF is Embedded IR (EIR).[14] [15] [16] Decision-makers take a prominent role throughout the EIR process including problem identification, research agenda-setting, data generation, interpretation and use of IR findings. Collaborative research partnerships between decision-makers and researcher

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[8] Eccles MP, Mittman BS. (2006) Welcome to implementation science. *Implement Sci.;1(1):1..*

[9] https://cancercontrol.cancer.gov/is/about

[10] Bhattacharyya, O., Reeves, S. and Zwarenstein, M., (2009). What is implementation research? Rationale, concepts, and practices. *Research on Social Work Practice, 19(5), pp.491-502*.

[11] Peters et al. (2013) *op. cit.*

[12] Theobald, S., Brandes, N., Gyapong, M., El-Saharty, S., Proctor, E., Diaz, T., Wanji, S., Elloker, S., Raven, J., Elsey, H., Bharal, S., Pelletier, D., & Peters, D. H. (2018). Implementation research: new imperatives and opportunities in global health. *Lancet (London, England), 392(10160), pp.2214–2228*

[13] Peters et al. (2013) *op. cit.*

[14] Ghaffar, A., Swaminathan, S., Sheikh, K., Al-Mandhari, A., Jhalani, M., Sambo, B. and Jakab, Z., 2020. Implementation research is crucial to countries' efforts to strengthen learning health systems. *Health Policy and Planning, 35(Supplement_2), pp.ii4-ii6.*

[15] Varallyay, N. I., Bennett, S. C., Kennedy, C., Ghaffar, A., & Peters, D. H. (2020). How does embedded implementation research work? Examining core features through qualitative case studies in Latin America and the Caribbean. *Health policy and planning, 35(Supplement_2),pp. ii98-ii111.*

[16] Varallyay et al. (2020) *op. cit.*

are central, rooted in common purpose and valuing diverse perspectives. Research is actively embedded into the implementation process throughout. These features are intended to maximise the relevance and utility of the knowledge generated and its use by decision-makers, and are likely to be particularly important for IR in complex adaptive systems, hence its endorsement by UNICEF.

Table 1: Key features of IR

Key feature	Description
Context specific:	IR recognises that context is a key influence on implementation and so makes context explicit at multiple levels including social, political, economic, organisational, institutional and systems-level
Demand driven:	IR is particularly concerned with the users of research. Research questions are based on needs identified by stakeholders, including communities, practitioners and policy-makers
Agenda-setting:	Its purpose is to set priorities and agendas and build shared commitment to addressing challenges, ensuring alignment with the priorities and needs of decision-makers
Multi-stakeholder:	IR involves deep and wide engagement of communities, implementers, policy-makers, programme managers, practitioners, researchers and funders in producing research, creating solutions and using the results
Multi-disciplinary:	It draws on disciplines including psychology, sociology, political science, engineering, economics, organisational theory and management, and involves input from individuals and groups with a range of perspectives and insights, as well as subject-specific experts
Methods fit purpose:	The flexible nature of IR means it uses a range of data sources and methods (see Section 5 below)
Real world:	It takes place within the reality of implementing organisations, settings and systems, usually not under controlled conditions although it can be part of pragmatic trials
Real time:	It is usually designed to provide results rapidly and in an iterative and evolving process, for greatest utility in decision-making
Focuses on implementation processes and outcomes:	It aims to understand how interventions are implemented, what sound implementation 'looks like', and whether it is achieved

3. Implementation research and complementary fields

As the previous section emphasises, IR is multi-disciplinary: it draws on, complements and supports other disciplines and fields of study, and they support IR. This is a key strength in IR but it can also cause confusion, as the distinction between IR and other disciplines, methods or aspects of programming is not always clear. This section of the briefing paper aims to shed some light on this, and the workshop will include a session on how IR sits alongside, supports and is supported by other UNICEF initiatives and priorities – including adaptive programming and knowledge management.

Adaptive programming has been identified by UNICEF as an important approach to programming and an area for focus and capacity building. The recent UNICEF discussion paper[17] proposed a definition of adaptive programming as "intentional agility in the ways our people, culture, processes and procedures, and resources and platforms are leveraged to design, implement, and learn from our work more efficiently and effectively." Adaptive programming responds to the uncertain and changing needs arising from the complex and volatile contexts in which UNICEF's programming operates, and the need for agile and responsive planning and business models that support planning for multiple scenarios and swifter adaptation to challenges and opportunities.

IR and adaptive planning are highly complementary. Both emphasise the need to empower staff to find locally relevant solutions, to locally defined problems, with locally relevant evidence. IR is a key tool that can support adaptive programming by analysing contexts and systems, revealing where and what adaptive response is needed, testing and refining responses, and producing agreed actionable solutions.

Monitoring and evaluation is also, of course, a central aspect of programming, and closely linked with IR. Monitoring is defined by UNICEF as "the periodic oversight of the implementation of an activity which seeks to establish the extent to which input deliveries, work schedules, other required actions and targeted outputs are proceeding according to plan, so that timely action can be taken to correct deficiencies detected'.[18.] Evaluation is defined as "an assessment, conducted as systematically and impartially as possible, of an activity, project, programme, strategy, policy, topic, theme, sector, operational area or institutional performance. It analyses the level of achievement of both expected and unexpected results by examining the results chain, processes, contextual factors and causality using appropriate criteria such as relevance, effectiveness, efficiency, impact and sustainability".[19] Monitoring and evaluation supports IR, and evaluating implementation is an important activity within IR, although IR considers other aspects of implementation too and is informed by implementation theory (see Section 5).

Knowledge mobilisation and brokering, research uptake and evidence-informed decision-making provide broader context to IR. These terms refer to the processes involved in strengthening the connections between research evidence and policy, programming and practice, aiming to harness the benefits of research for social change. The UNICEF global knowledge management strategy[20] emphasises the vision for UNICEF as "an organization that puts knowledge to work to achieve results for children and fulfill their rights". This is an important aspect of building a culture for IR. IR takes a more specific focus, studying the hands-on activity involved in the integration

[17] UNICEF (2021) Discussion Paper: Developing a Systematic Adaptive Programming Approach to Support UNICEF's Strategic Plan 2022-2025
[18] A UNICEF Guide for Monitoring and Evaluation: Making a Difference?
[19] Revised Evaluation Policy of UNICEF (2018) https://www.unicef.org/evaluation/.
[20] UNICEF Global Knowledge Management Medium-Term Strategy 2021-22

of evidence, in the form of a programme, policy or practice, in a setting or system. Knowledge mobilisation involves processes intended to "help it happen", where IR is concerned with activities that "make it happen".[21] Knowledge mobilisation and brokering should be integral parts of any IR project to ensure that learning is shared, and that the evidence generated is turned into decisions and actions on the ground.

Knowledge translation is the process of making research findings more applicable in practice, through discovery (referred to as T1 translation), programme or innovation development (T2), and application in practice (T3). IR can help to ensure that T2 translation is responsive to real world contexts, and it richly informs understanding of T3 translation in real world settings.

IR also draws on many specific disciplines and fields. **Scaling science** refers to the study and practice of approaches to optimising the reach of innovations. A distinction is drawn between scaling through replication or spread, with the programme or other intervention delivered increasingly widely (horizontal scaling), and scale-up through institutionalisation, as governments or other centralised powers incorporate programme activities into regulation, legislation and funding (vertical scaling)[22] Scaling science is the study and practice of these approaches, and refers to both "the objective of scaling scientific research results to achieve impacts that matter" and "the development of a systematic, principle-based science of scaling" for the public good.[23]

Systems thinking, systems analysis and linked fields are also highly relevant to IR. They involve the examination of systems to understand issues such as the component parts of systems, how these components interact directly and indirectly, their alignment, how an intervention in the system might catalyse a range of reactions, how systems and their operation can be improved, and the interactions between multiple systems (e.g., health, education and child protection systems). These issues are of deep relevance to IR, and systems analysis is an important aspect of IR.

Applied behavioural science is a multi-disciplinary field of study which aims to understand the influencers and determinants of human behaviour in order to aid the promotion, adoption and maintenance of positive behaviours. It is a core part of UNICEF's Communication for Development (C4D) programme implementation activity.[24] **Behavioural economics** is a linked field that particularly focuses on the decisions of individuals and communities, how they are influenced by social norms, and the psychological, cognitive, emotional, cultural, economic, social and other factors at play. Both are complementary to IR, particularly to understanding how to initiate and support the changes in behaviour by individuals, groups and organisations that effective implementation involves.

Improvement science is an applied science aimed at generating learning about how to deliver an initiative or intervention more effectively. It emphasises innovation and rapid-cycle field testing and uses a range of improvement methods and tools. Continuous Quality Improvement refers to embedded processes for improvement. IR highlights areas where improvement is needed and the social and contextual factors that shape performance or inform the responses needed. Improvement science provides specific techniques for designing and testing improvement that can be used in IR.

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[21] Greenhalgh, T., Robert, R., Macfarlane, F., Bate, P., and Kyriakidou, O. (2004). Diffusion of Innovations in Service Organizations: Systematic Review And Recommendations. *Milbank Quarterly 82(4) pp.581-629*

[22] Aarons, G. A., Sklar, M., Mustanski, B., Benbow, N., and Brown, C. H. (2017). "Scaling-out" evidence-based interventions to new populations or new health care delivery systems. *Implementation Science, 12(1), pp.111-124.*

[23] Gargani J. and McLean R. (2017) Scaling Science. *Stanford Social Innovation Review, Fall 2017: pp.34-39*

[24] https://www.unicef.org/esa/communication-for-development

Finally, **operational research** addresses problems in the operational performance and management of processes and systems, in order to improve their operational effectiveness. It involves a range of methods, from exploratory and descriptive to analytical and modelling. Operational research can be used to explore and develop solutions to system or process bottlenecks identified by IR.

4. Institutionalizing implementation research

UNICEF aims to institutionalise IR across its programming activity, so that it becomes mainstream and routine practice[25] ensuring effective and evidence-informed implementation, scaling and lesson-learning across UNICEF's global work to achieve results for children and communities. This section discusses some of the foundational requirements for institutionalising IR, as preparation for further discussion in the workshop.

Funding for IR

Despite the growth of IR globally, there remains a significant imbalance between the funding available for basic research and intervention development on the one hand and for IR on the other. IR – like other applied research – is consistently under-valued and under-resourced, and institutionalising IR will require regular committed funding and political commitment by governments, UN and donor agencies. The World Health Organisation (WHO), the Alliance for Health Policy and Systems Research (Alliance HPSR) and the UNICEF/UNDP/World Bank/WHO Special Program for Research and Training in Tropical Diseases (TDR) and other global partners have established important IR funding and capacity building initiatives across the UN system. UNICEF's own work demonstrates that much can be achieved with relatively modest IR funding built into programme budgets[26], and the value of this in embedding and mainstreaming IR. However, funding for capacity building and for larger IR endeavours, for example multi-country or cross-sectoral initiatives, is also needed. A key route to institutionalising IR will therefore be to identify and mobilise existing resources, and catalyse new opportunities, at country, regional and global levels.

Capacity building for IR

Although IR in LMICs is growing, it is still frequently led or undertaken by researchers based in HICs[27] and there is a need to build capacity within LMIC organisations and systems to lead and collaborate in IR. This means attending not only to the development of IR skills among researchers but also to training decision-makers to demand IR evidence, engage in IR, and use the findings from IR in decision-making.[28]

It will require aligning drivers for IR across stakeholders, institutions and systems to encourage the use of IR at organisational and country level. IR calls for boundary spanning work across professional, disciplinary and institutional domains; collaboration and partnerships; commitment to producing action-oriented research, and expectations of the use of evidence in policy and practice, all of which need to be incentivised in policymaking, practice and research systems.

Capacity building for IR should involve integrating IR within existing platforms as well as developing new platforms, particularly those that bring stakeholder groups together. This may involve for example university programmes and fellowships, online training opportunities (such as the TDR online course on IR, IR toolkit and other linked initiatives[29]), network-based collaborative learning, conferences, interactive workshops, summer programmes and learning collaboratives. Capacity building also requires investment in partnerships and relationships between researchers, policymakers,

[25] Vega et al (2020) *op. cit.*

[26] Jackson, D., Shahabuddin, A.S.M., Sharkey, A.B., Källander, K., Muñiz, M., Mwamba, R., Nyankesha, E., Scherpbier, R.W., Hasman, A., Balarajan, Y. and Albright, K. (2021). Closing the know-do gap for child health: UNICEF's experiences from embedding implementation research in child health and nutrition programming. *Implementation science communications, 2(1), pp.1-9.*

[27] Vega et al. (2020) *op. cit.*

[28] Panisset U., Koehlmoos T.P., Alkhatib A.H., Pantoja T., Singh P., Kengey-Kayondo J., McCutchen B. Implementation research evidence uptake and use for policy-making. *Health Res Policy Syst. 2012 Jul 2;pp.10:20.*

[29] https://www.who.int/tdr/capacity/strengthening/mooc/en/; https://www.who.int/tdr/publications/topics/ir-toolkit/en/; https://tdr.who.int/activities/sort-it-operational-research-and-training

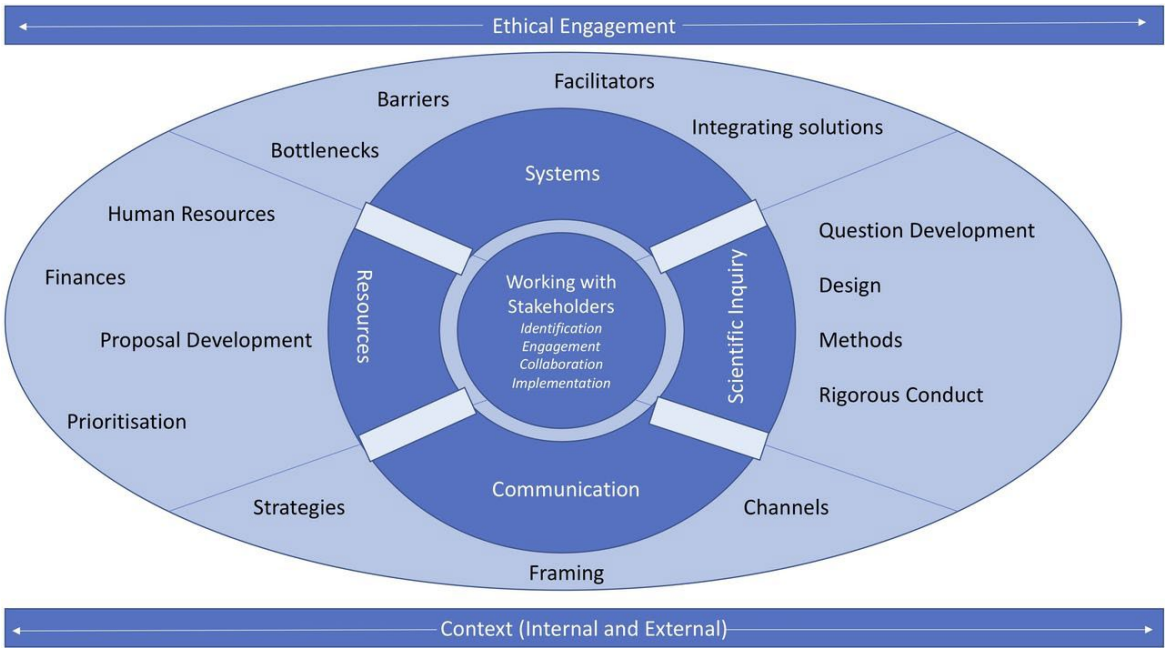
practitioners and communities, supporting the collaborative work of these groups in IR and in decision-making for implementation within the governance system.

Competencies for IR

The core competencies for IR are important foundations for capacity building. A framework of competencies for IR in LMICs, produced through collaborative work with seven LMIC institutions (shown in Figure 1) highlights those required.[30] The model depicts the core competencies as concentric circles of knowledge and skills, highlighting that starting points may vary and that the development of competencies is not a linear or uniformly scaffolded process:

- Competencies for **working meaningfully with stakeholders** are at the centre of the model.
- Four key themes are mapped in the next circle: **scientific inquiry, systems, resources** and **communication and advocacy**.
- The key **skills and competencies** involved in each theme are unpacked in the next circle. For example, the theme of systems involves understanding systems bottlenecks and barriers; identifying and leveraging potential facilitators to address barriers; and developing solutions that are integrated into systems.
- **Ethical engagement** and the **assessment of contexts** are cross-cutting competencies applied throughout IR work.

Figure 1: A framework of core competencies in IR in LMICs (Alonge et al., 2019)[31]



[30] Alonge, O., Rao, A., Kalbarczyk, A., Maher, D., Marulanda, E.R.G., Sarker, M., Ibisomi, L., Dako-Gyeke, P., Mahendradhata, Y., Launois, P. and Vahedi, M. (2019). Developing a framework of core competencies in implementation research for low/middle-income countries. *BMJ Global Health, 4(5) e001747*

[31] Alonge et al., (2019) *op. cit.*

Deliberate focus on equity in IR

A key focus in IR is how programming responds to inequity. It is a sobering fact worth highlighting that because programming operates in a context of structural inequality, implementation can inadvertently *increase* inequity within beneficiary communities – for example because the most marginalised people are not reached, or their needs are less well met. Collaborating with communities in IR is essential. IR needs to bring sustained and purposeful attention to equity if this unintended consequence is to be avoided. Bringing an equity lens to IR involves attending to issues such as:[32,33]

- understanding how equity arises and what holds it in place
- identifying the most disadvantaged groups
- using equity-relevant metrics
- designing and tailoring interventions to address the determinants of inequality and meet the needs of the most disadvantaged
- designing and modifying implementation strategies to ensure the most marginalised are effectively reached and served
- explicitly assessing whether and how equity has been promoted

Equity needs to be a core part of IR capacity building, for the promise of IR to be fulfilled.

[32] Baumann, A. A., & Cabassa, L. J. (2020). Reframing implementation science to address inequities in healthcare delivery. *BMC health services research, 20(1), pp.1-9.*

[33] Brownson, R. C., Kumanyika, S. K., Kreuter, M. W., & Haire-Joshu, D. (2021). Implementation science should give higher priority to health equity. *Implementation Science, 16(1), pp.1-16.*

5. Optimizing IR methods and approaches

Methods and designs for IR

IR is question-driven rather than method-driven[34] – an imperative, of course, for all good research but one that is particularly relevant to IR because of its engagement with real world contexts. A wide range of qualitative and quantitative methods are appropriate, and mixed-methods are very commonly used.

Participatory action research involving iterative cycles of reflection and action, with local implementers, decision-makers and communities actively involved, is well suited to IR. The focus on understanding contexts and actions, and on rapid feedback and solution generation, make **qualitative methods** – in-depth interviews, focus groups, observation – particularly valuable. **Administrative data** shed important light on features of contexts and systems and are essential for monitoring e.g. reach and take-up. **Quantitative data** on attitudes and behaviours highlight variation between groups, settings and over time. Ongoing work is developing and validating **standardised measures** of core implementation constructs.[35]

To accelerate learning, implementation is increasingly integrated into effectiveness trials in **hybrid designs**[36] which explore implementation barriers and facilitators to understand intervention effectiveness, actively test implementation strategies and their relationship with implementation effectiveness, or focus primarily on testing implementation strategies. The emphasis on real-time actionable findings and on real world contexts means that research methods that do not involve controlled designs are commonly used. However, some IR questions call for experimental or quasi-experimental approaches. For example, questions about the comparative effectiveness of different implementation strategies and how strategies are best combined are catalysing the use of approaches which test the sequencing and layering of implementation strategies, to optimise the use of implementation resources.[37] [38]

Systematising approaches to IR within UNICEF

There is growing recognition within IR of the value of systematic approaches for identifying IR questions and agendas and analysing implementation contexts, determinants and strategies. This is important to optimise the utility of IR, avoiding wastage, reinvention or key issues being missed. For UNICEF it will also expand the potential for shared learning, and enable findings to be synthesised across projects, countries and sectors, generating insight into how contexts shape implementation issues and outcomes.

There is particular value in consistency in how **implementation outcomes** are conceptualised. Implementation outcomes are the effects of implementation efforts and are distinguished from beneficiary outcomes (improved health, education, income, wellbeing etc.) and service outcomes (improved efficiency, responsiveness, safety etc.). A widely-used framework of implementation outcomes – often referred to as 'Proctor's taxonomy of implementation outcomes' – is shown in Table 2. It identifies the implementation outcomes associated with intervention effectiveness, based on extensive review of evidence. IR activity will focus on different outcomes at different

[34] Sheikh, K., Hargreaves, J., Khan, M., & Mounier-Jack, S. (2020). Implementation research in LMICs—evolution through innovation. *Health policy and planning, 35(Supplement_2), pp. ii1-ii3.*

[35] See particularly the work of https://societyforimplementationresearchcollaboration.org

[36] Curran, G. M., Bauer, M., Mittman, B., Pyne, J. M., & Stetler, C. (2012). Effectiveness-implementation hybrid designs: combining elements of clinical effectiveness and implementation research to enhance public health impact. *Medical Care, 50(3), pp.217-226.*

[37] Guastaferro K. and Collins L.M. (2021) Optimization Methods and Implementation Science: An Opportunity for Behavioral and Biobehavioral Interventions *Implementation Research and Practice volume 2:pp.1-5*

[38] Miller, C., Smith, S.N. and Pugatch, M. (2020) Experimental and quasi-experimental designs in implementation research *Psychiatry Research 283 (2020) p.112452*

stages. Consistency in how implementation outcomes are conceptualised aids analysis of how outcomes are inter-related, and how implementation outcomes relate to service and beneficiary outcomes, and will highlight transferrable learning.

Table 2: Proctor's taxonomy of implementation outcomes[39]

Outcome	Examples of target questions
Acceptability	Is the intervention agreeable /satisfactory to those involved in implementing it?
Adoption	Does anyone take up the intervention and implement it?
Appropriateness	Do implementers and users / recipients of the intervention perceive the intervention to be a good fit / relevant / compatible with setting, cultures etc.?
Costs	What are the expenses related to the use and implementation of the intervention?
Feasibility	Is the intervention easy to understand and use?
Fidelity	Can the intervention be implemented as intended?
Penetration	Has it become integrated / institutionalised as agency practice? How many implementers use the intervention / users receive the intervention?
Sustainability	What is needed to maintain the intervention?

There are also a number of frameworks that synthesise and categorise the **determinants of implementation**, that is, the very wide range of factors that influence or are barriers to or facilitators of effective implementation. The Consolidated Framework for Implementation Research[40] (CFIR) is the most widely used. It is based on extensive evidence review and has been refined to include considerations particularly relevant to IR in LMICs.[41] The refined framework sets out individual constructs which

[39] Proctor E.K., Silmere H., Raghavan R., Hovmand P., Aarons G.A., Bunger A.C., Griffey R. & Hensley M. (2011). Outcomes for implementation research: Conceptual distinctions, measurement challenges, and research agenda. *Administration and Policy in Mental Health and Mental Health Services Research, 38(2), pp.65–76.*

[40] https://cfirguide.org; Damschroder L. J., Aron D. C., Keith R. E., Kirsh S. R., Alexander J. A., & Lowery J.C.. (2009). Fostering implementation of health services research findings into practice: A consolidated framework for advancing implementation science. *Implementation Science, 4(50)*

[41] Means, A.R., Kemp, C.G., Gwayi-Chore, M.C., Gimbel, S., Soi, C., Sherr, K., Wagenaar, B.H., Wasserheit, J.N. and Weiner, B.J., 2020. Evaluating and optimizing the consolidated framework for implementation research (CFIR) for use in low-and middle-income countries: a systematic review. *Implementation Science, 15(1), pp.1-19.*

may act as facilitators or barriers within six domains, highlighting potentially relevant features of:

- **the intervention**: including its adaptability, complexity, credibility
- the **individuals involved in implementation**: their knowledge, beliefs, readiness for change
- the **immediate implementing setting (inner context)**: factors such as culture, structure, team characteristics
- the **outer context**: including community needs and resources, external incentives
- the **systems context**: the wider systems architecture, strategic policy alignment, external funding priorities etc.
- and the **implementation processes** used.

The most relevant determinants, and ways in which they operate as barriers or facilitators, will vary between IR contexts, but a framework such as this, used adaptively and flexibly, helps to ensure that key variables are explicitly considered, and supports shared learning across implementation efforts, contexts and systems.

Implementation strategies are a key focus in IR. They are the specific activities undertaken to enhance implementation, directed at aligning the programme, service or policy and its operating contexts. IR is centrally concerned with understanding the implementation strategies required, supporting purposeful selection of strategies, and testing and refinement. A key issue in IR is recognition that the selection of strategies needs to be based on systematic analysis of the operating environment and its barriers and facilitators, and directed at addressing barriers and leveraging facilitators. Consistency in how strategies are conceptualised aids this systematic selection and assessment, and helps to ensure the full range of potential strategies is brought into consideration (avoiding, for example, the common over-reliance on training alone). An extensive programme of IR has codified implementation strategies and is generating learning about their alignment with implementation barriers.[42] [43]

[42] Powell, B.J., Waltz, T.J., Chinman, M.J., Damschroder, L.J., Smith, J.L., Matthieu, M.M., Proctor, E.K. and Kirchner, J.E. (2015). A refined compilation of implementation strategies: results from the Expert Recommendations for Implementing Change (ERIC) project. *Implementation Science, 10(1), pp.1-14.*

[43] Waltz, T. J., Powell, B. J., Fernández, M. E., Abadie, B., & Damschroder, L. J. (2019). Choosing implementation strategies to address contextual barriers: diversity in recommendations and future directions. *Implementation Science, 14(1), 1-15.*

Table 3: A taxonomy of implementation strategies (Powell et al., 2015[44])

Key term	Definition
Develop stakeholder relationships	Build coalition, engage with leaders and champions, establish implementation team, promote networking
Engage service users	Involve in design or selection of programme, support as active participants
Plan and evaluate	Assess readiness, identify barriers, develop implementation plan, quality monitoring
Adapt and tailor the intervention	Identify adaptations needed, design and test adaptations
Financial strategies	Access funding, set up contracts, change financial incentives
Change the infrastructure	Secure a mandate for change, change physical space and equipment, adapt recording and monitoring systems, change accreditation
Train and educate stakeholders	Training sessions, train-the-trainer approaches, shadowing, peer learning, coaching, ongoing support
Support practice staff	Adapt roles, set up new teams, provide reminders, share data
Provide interactive assistance	Facilitation, supervision, local technical assistance

[44] Powell et al., (2015) *op. cit.*

Finally, high quality systematic **reporting of IR** is important to institutionalising IR within UNICEF and leverage its impacts. It will enrich understanding of commonality in implementation dimensions between sectors and contexts, as well as differences, and aid shared learning. It will also help to enhance the quality and credibility of IR undertaken, with advantages for securing collaborations, fundraising and reaching wider audiences with IR findings.

Systematic reporting is supported by frameworks such as the Standards for Reporting Implementation Studies (StaRI) checklist.[45] The framework (reproduced in Table 4) sets out 27 items that should be included in IR reporting to ensure consistent documentation of the aims and objectives, methods, results and implications. The checklist outlines the information needed about the study, highlighting where there are different consideration in reporting on *implementation strategies* and the *intervention.*

The workshop will involve discussion of how UNICEF can use these frameworks to more systematically shape IR agendas and design, undertake and report IR.

Table 4: StaRI checklist of items to be reported

Checklist item Title	No.	Implementation strategy	Intervention
Title	1	Identification as an implementation study, and description of the methodology in the title and/or keywords	
Abstract	2	Identification as an implementation study, including a description of the implementation strategy to be tested, the evidence-based intervention being implemented, and defining the key implementation and health outcomes	
Introduction	3	Description of the problem, challenge, or deficiency in healthcare or public health that the intervention being implemented aims to address	
	4	The scientific background and rationale for the implementation strategy (including any underpinning theory framework, or model, how it is expected to achieve its effects, and any pilot work	The scientific background and rationale for the intervention being implemented (including evidence about its effectiveness and how it is expected to achieve its effects)
Aims and objectives	5	The aims of the study, differentiating between implementation objectives and any intervention objectives	
Methods: description	6	The design and key features of the evaluation (cross referencing to any appropriate methodology reporting standards) and any changes to study protocol, with reasons	
	7	The context in which the intervention was implemented (consider social, economic, policy, healthcare, organisational barriers and facilitators that might influence implementation elsewhere)	
	8	The characteristics of the targeted "site(s)" (locations, personnel, resources, etc) for implementation and any eligibility criteria	The population targeted by the intervention and any eligibility criteria

[45] Pinnock, H., Barwick, M., Carpenter, C.R., Eldridge, S., Grandes, G., Griffiths, C.J., Rycroft-Malone, J., Meissner, P., Murray, E., Patel, A. and Sheikh, A. (2017). Standards for reporting implementation studies (StaRI) statement. *BMJ 2017 356; i6795.*

Checklist item Title	No.	Implementation strategy	Intervention
	9	A description of the implementation strategy	A description of the intervention
	10	Any subgroups recruited for additional research tasks, and/or nested studies are described	
Methods: evaluation	11	Defined pre-specified primary and other outcome(s) of the implementation strategy, and how they were assessed. Document any pre-determined targets	Defined pre-specified primary and other outcome(s) of the intervention (if assessed), and how they were assessed. Document any pre-determined targets
	12	Process evaluation objectives and outcomes related to the mechanism(s) through which the strategy is expected to work	
	13	Methods for resource use, costs, economic outcomes, and analysis for the implementation strategy	Methods for resource use, costs, economic outcomes, and analysis for the intervention
	14	Rationale for sample sizes (including sample size calculations, budgetary constraints, practical considerations, data saturation, as appropriate)	
	15	Methods of analysis (with reasons for that choice)	
	16	Any a priori subgroup analyses (such as between different sites in a multicentre study, different clinical or demographic populations) and subgroups recruited to specific nested research tasks	
Results	17	Proportion recruited and characteristics of the recipient population for the implementation strategy	Proportion recruited and characteristics (if appropriate) of the recipient population for the intervention
	18	Primary and other outcome(s) of the implementation strategy	Primary and other outcome(s) of the intervention (if assessed)
	19	Process data related to the implementation strategy mapped to the mechanism by which the strategy is expected to work	
	20	Resource use, costs, economic outcomes, and analysis for the implementation strategy	Resource use, costs, economic outcomes, and analysis for the intervention
	21	Representativeness and outcomes of subgroups including those recruited to specific research tasks	
	22	Fidelity to implementation strategy as planned and adaptation to suit context and preferences	Fidelity to delivering the core components of intervention (where measured)
	23	Contextual changes (if any) which may have affected outcomes	
	24	All important harms or unintended effects in each group	
Discussion	25	Summary of findings, strengths and limitations, comparisons with other studies, conclusions and implications	
	26	Discussion of policy, practice and/or research implications of the implementation strategy (specifically including scalability)	Discussion of policy, practice and/or research implications of the intervention (specifically including sustainability)
General	27	Include statement(s) on regulatory approvals (including, as appropriate, ethical approval, confidential use of routine data, governance approval), trial or study registration (availability of protocol), funding, and conflicts of interest	

6. Conclusion and summary

UNICEF's commitment to IR and to institutionalising it across global programming holds tremendous promise for the achievement of its goals. The principles and aims of IR are highly aligned with UNICEF's work. The IR Roadmap, and the actions arising from the workshop, will provide important direction to further work to strengthen capacity for IR across UNICEF's country, regional and global teams and partnerships, and will help to identify key strategic partnerships for fundraising, lesson-learning and advocacy – for the benefit of children, families and communities around the world.

Recommended further reading

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Alonge, O., Rao, A., Kalbarczyk, A., Maher, D., Marulanda, E.R.G., Sarker, M., Ibisomi, L., Dako-Gyeke, P., Mahendradhata, Y., Launois, P. and Vahedi, M. (2019). Developing a framework of core competencies in implementation research for low/middle-income countries. *BMJ Global Health, 4(5),* p.e001747.

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