



HEARTS IN THE AMERICAS

Regional Workshop

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HEARTS IN THE AMERICAS

Regional Workshop

What is Implementation Research?

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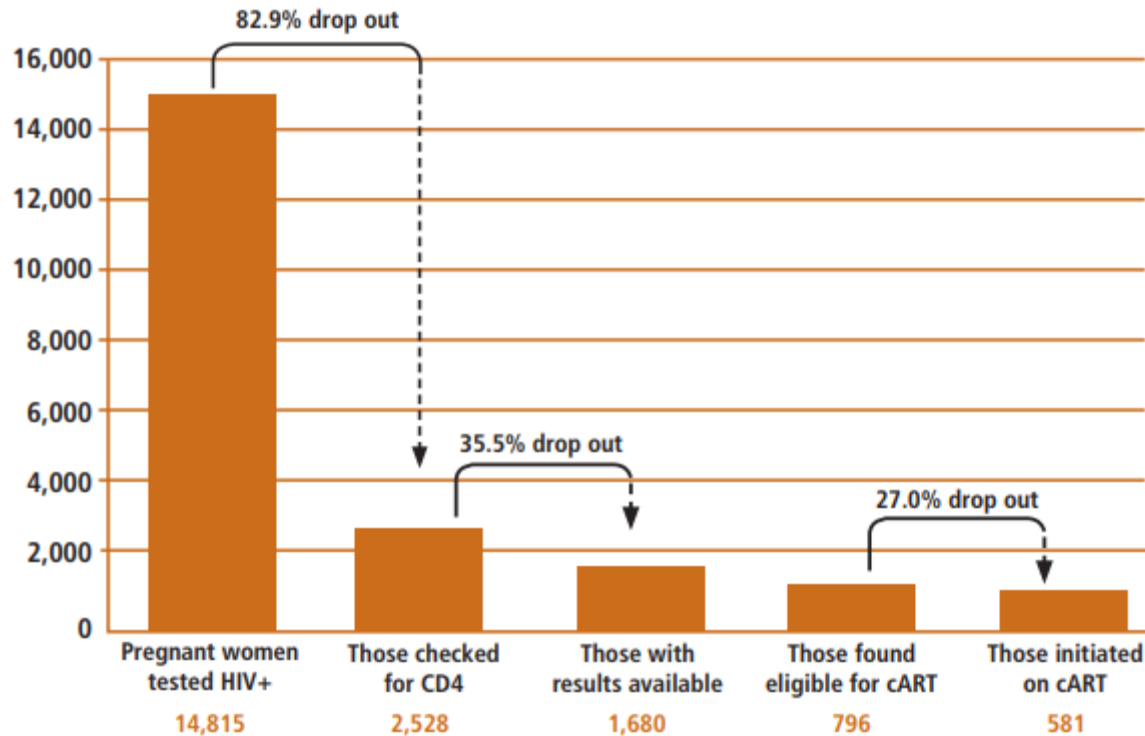
HEARTS

IN THE AMERICAS Regional Workshop

'One day I will go live in Theory, because in theory everything goes as planned'



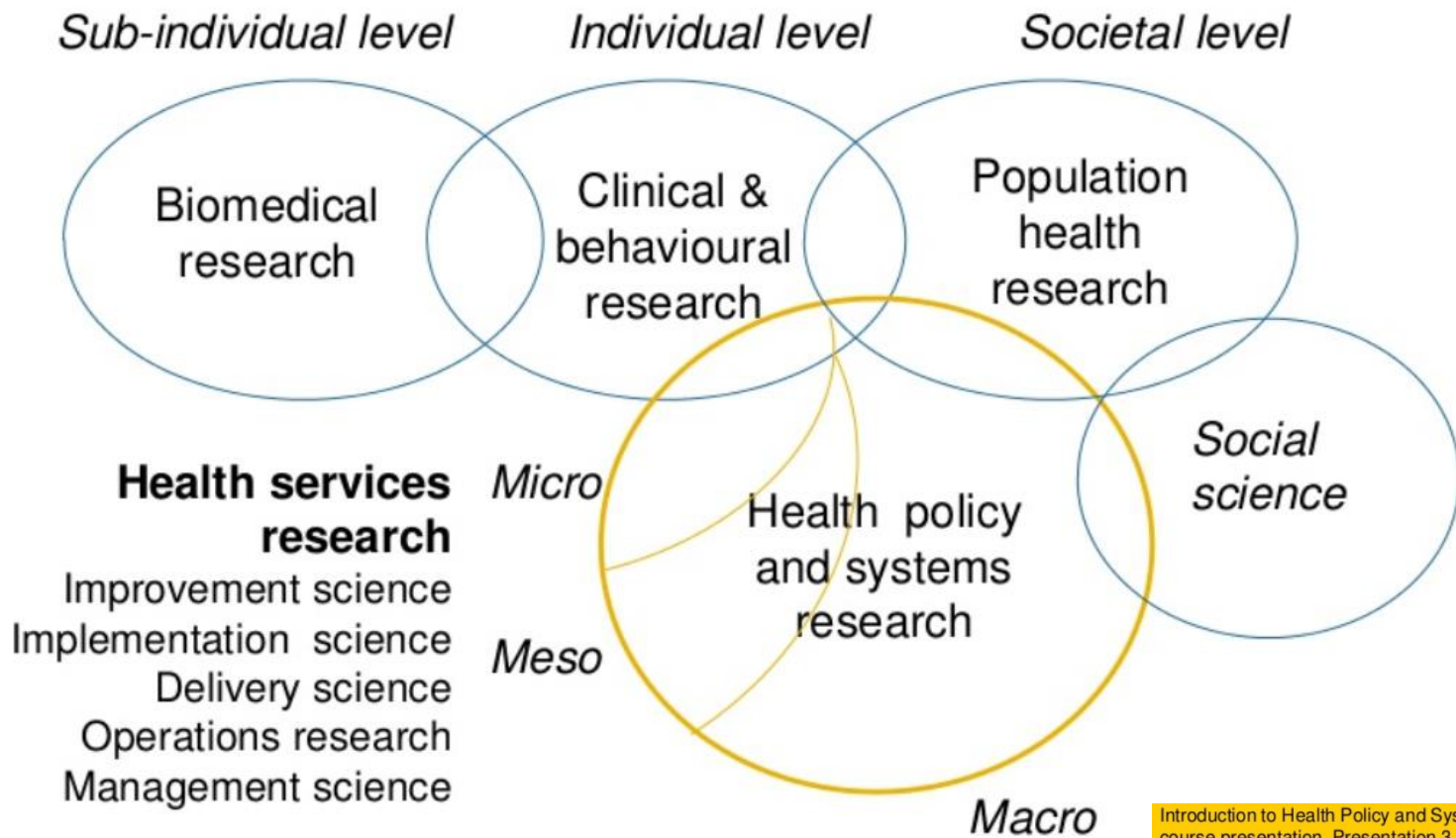
The Prevention of Mother-To-Child-Transmission cascade in Zambia (2007-2008)



Mandala. Prevention of mother-to-child transmission of HIV in Zambia: implementing efficacious ARV regimens in primary health centers. BMC Public Health 2009;9:314

HPSR focus

Adapted from Hoffman et al. 2012

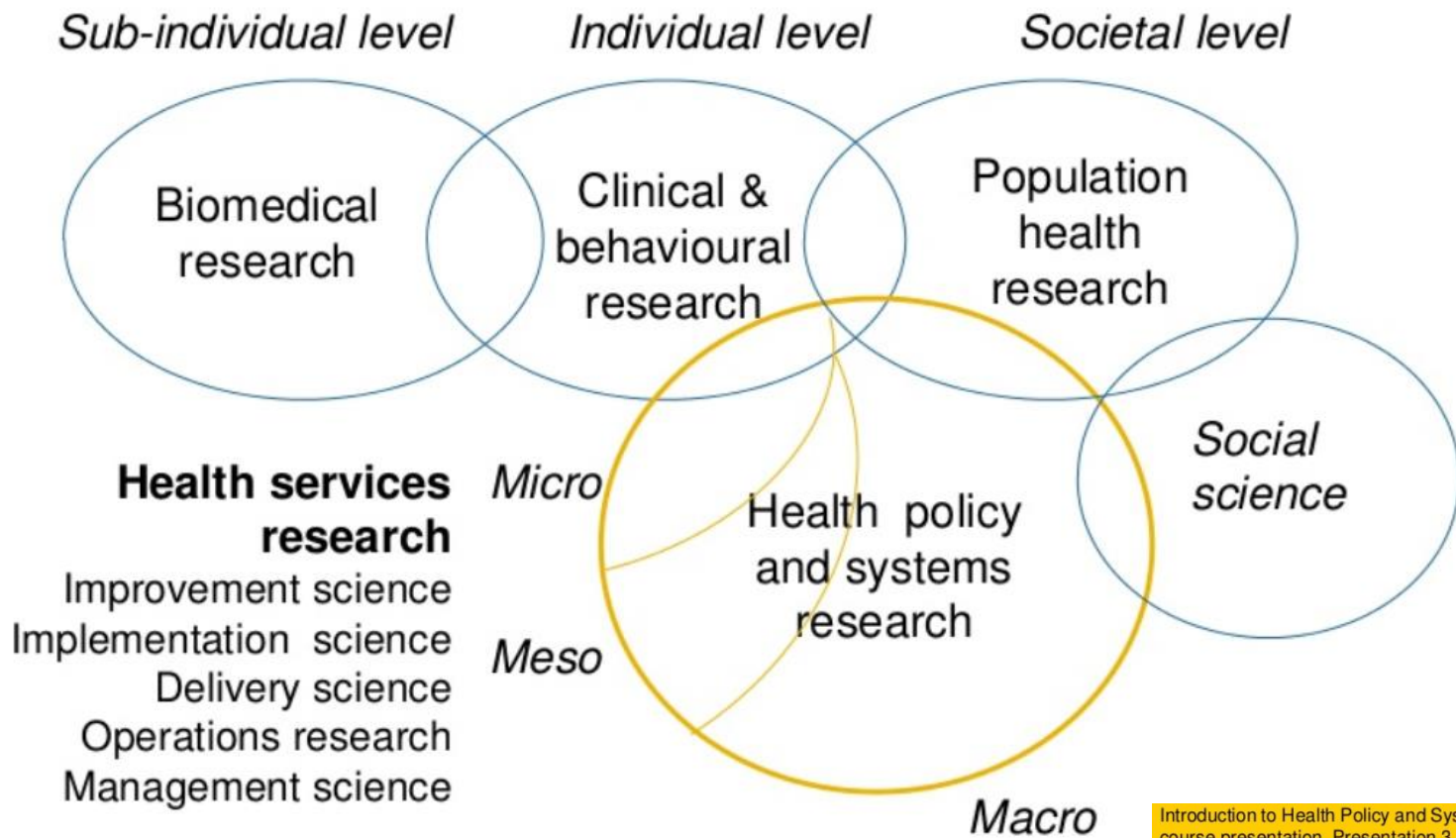


Efficacy trials vs Effectiveness trial

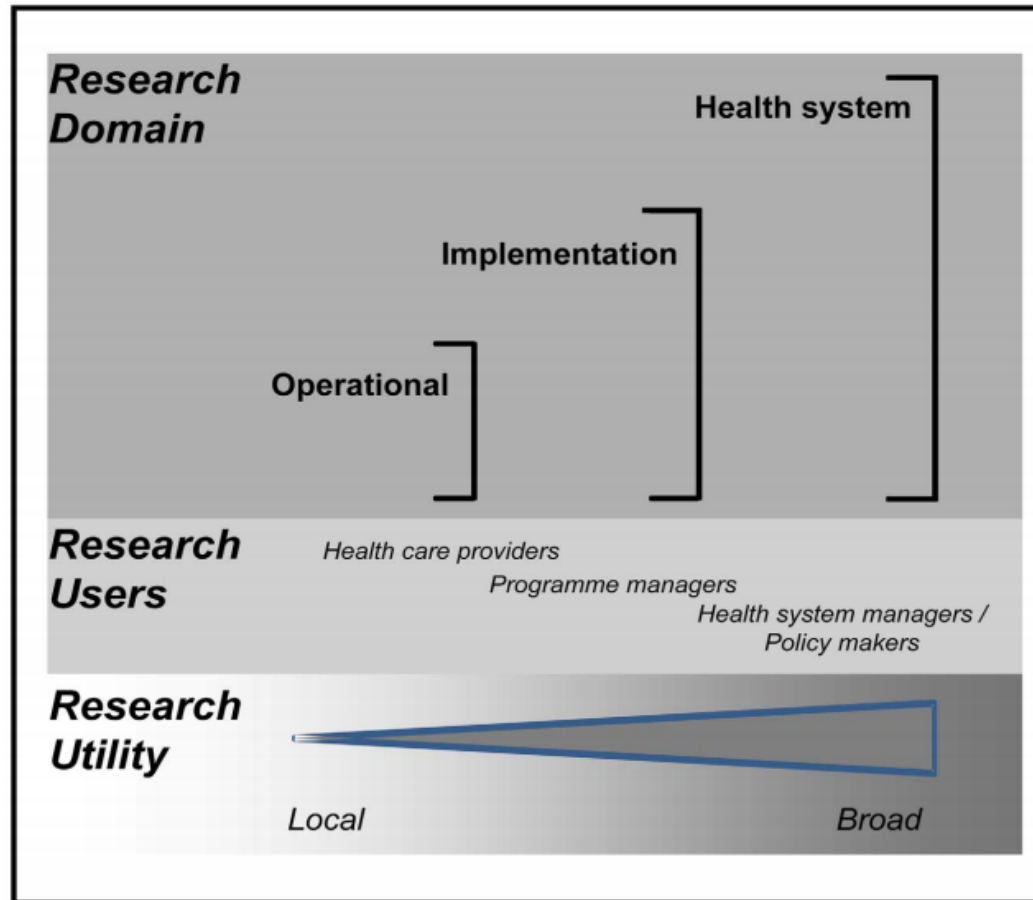
	Efficacy Trial	Effectiveness Trial
Validity Priority	Internal > External	External ≥ Internal
Population and Sample	<ul style="list-style-type: none"> • Highly selected for condition of interest, narrowly defined • Few comorbidities • Willing and motivated participants 	<ul style="list-style-type: none"> • Selected for condition of interest, reflecting presentation in source population • Comorbidities resemble those in population to which results will be applied; only those who cannot practically or ethically participate are excluded
Intervention	<ul style="list-style-type: none"> • Intervention staff are highly qualified • Training may be intensive • Fidelity monitoring may be similarly intensive 	<ul style="list-style-type: none"> • Staff selection, training, and fidelity monitoring resemble those likely to be feasible in target sites outside of the protocol proper
Outcome Measures and Data Collection	<ul style="list-style-type: none"> • Outcome measurements can be extensive, casting a wide net for potential secondary effects, moderators and mediators, or adverse effects • Since subjects are motivated, respondent burden less of a concern 	<ul style="list-style-type: none"> • Outcome batteries minimize respondent burden (in terms of both frequency and length of assessments) since subjects are heterogeneous in their willingness and capability to participate • Accordingly, outcome measures chosen carefully to target fewer outcomes, and must be simple to complete
Data Analysis	<ul style="list-style-type: none"> • Standard statistical approaches suffice, and data-intensive analyses may be feasible 	<ul style="list-style-type: none"> • Analyses to account for greater sample heterogeneity • Analyses account for more missing data and data not missing at random

HPSR focus

Adapted from Hoffman et al. 2012



Research to Improve Health Systems



Operations (operational) research questions

“Is prolonged smear turnaround time in facilities associated with a high rate of initial TB treatment default?”

Additional aspects to be considered are: high staff workload; Inefficient management of results in the facility - Incomplete recording in the register; availability of community health workers to do patient recalls

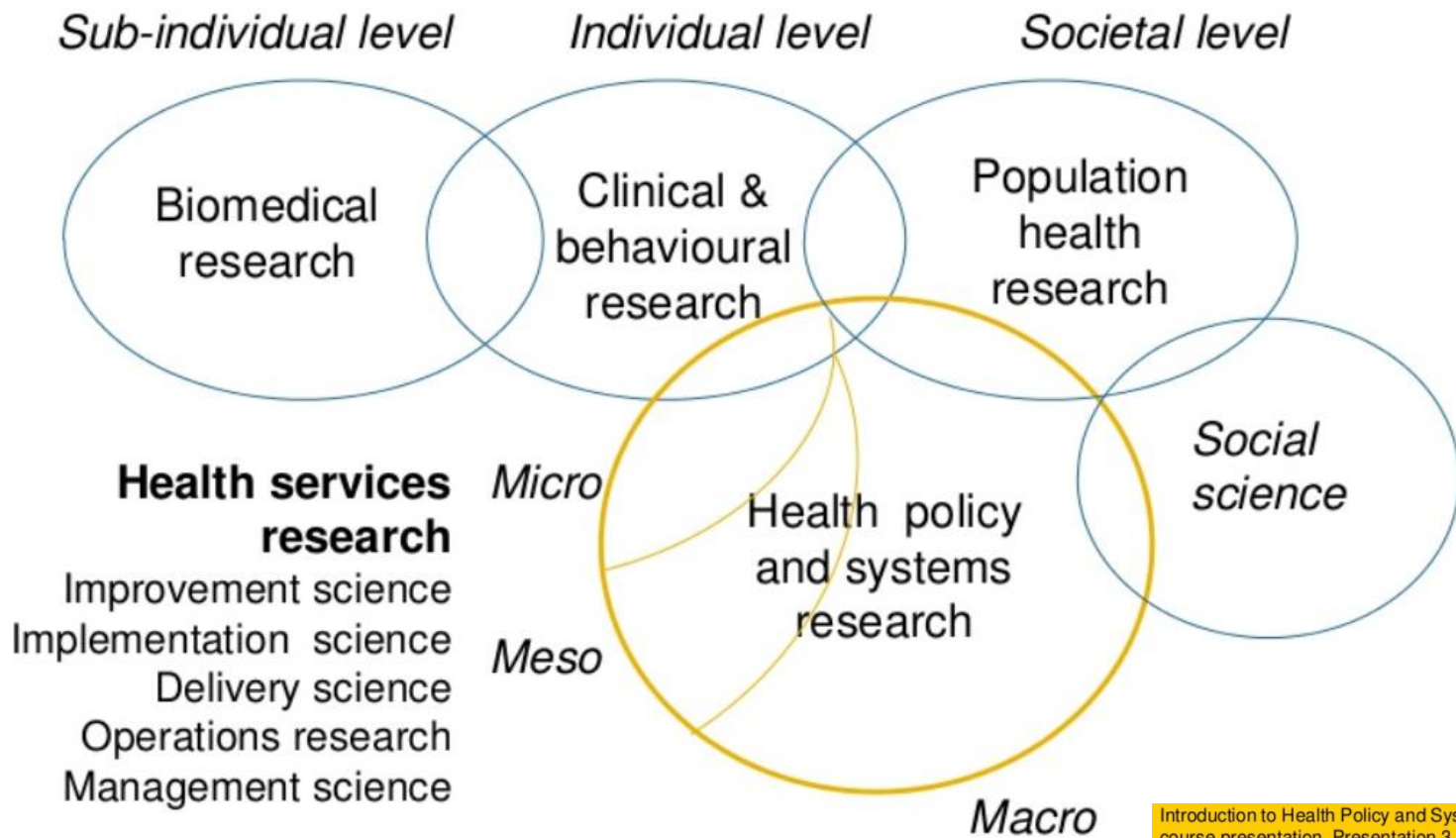
- What are the implementation problems of a specific project?
- What are strategies to deal with implementation problems?
- What policies or service delivery strategies can improve effectiveness or efficiency?
- What is the optimal allocation of resources for the program?

Research to Improve Health Systems

Research Domain	Research Question*
Operational	Can the “communication for behavioural impact” (COMBI) strategy improve the poor compliance with mass drug administration for LF elimination in Tamil Nadu, India?
	Which locations should be targeted for delivering HIV prevention services in Kawempe district, Uganda?
	Which of the current ART payment strategies in use in Nairobi should be retained for the new integrated programme?
Implementation	Should the sleeping sickness programme in Equator Nord province, DRC, change its first-line drug?
	How to deliver ivermectin for onchocerciasis control and ensure sustained high treatment coverage in isolated rural communities?
	How to improve access to vaccination among children who are currently not reached by immunisation services?
	How to implement antenatal syphilis screening—one-stop versus conventional service?
Health system	How to effectively implement a new intervention package for kala azar elimination in the Indian subcontinent?
	To what extent do health services reach the poor? How can this be improved?
	Should fees be charged to clients who use health centres for curative services?
	How effective are different policies for attracting nurses to rural areas?
	What has been the impact of the rapid scale-up of HIV programmes on fragile health systems?

HPSR focus

Adapted from Hoffman et al. 2012



What is Implementation Science?

- 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”.*
- ..“is the study of methods to improve the uptake, implementation and translation of research findings into routine and common practices, sometimes referred to as the “know-do” or “evidence-to-program” gap”. IS framework “includes monitoring and evaluation, operations research and impact evaluation, which should provide a broader framework for a full assessment of both the effectiveness and efficiency of programs”**.

*Eccles MP, Mittman BS. Welcome to implementation science. *Implement Sci.* 2006; 1: 1

**Padian NS, Holmes CB, McCoy SI, Lyerla R, Bouey PD, Goosby EP. Implementation science for the US President's Emergency Plan for AIDS Relief (PEPFAR). *J Acquir Immune Defic Syndr.* 2011 Mar 1;56(3):199-203.

What is Implementation Research?

- “..the scientific study of the processes used in the implementation of initiatives as well as the contextual factors that affect these processes.”
- AHPSR suggests that a major purpose of implementation research is “to support and promote the successful application of interventions that have been demonstrated to be effective.”

Key principles and concepts of IR activities

- Implementation research (IR) activities should focus on questions around implementing evidence-based interventions.
- IR activities should be conducted under real world conditions, with the types of resources, incentives and operational support they would have under routine situations.
- IR studies should provide evidence for the ‘how’ and ‘why’ evidence-informed interventions led to health impact through use of implementation outcome variables and a pragmatic research paradigm.
- Conducting IR studies should be fit to purpose and balance the need to address the immediate implementation problems and support broader and longer term learning.
- IR activities require multistakeholder collaboration and partnerships.

Implementation strategies

- Implementation strategies are methods or techniques used to improve adoption, implementation, sustainment, and scale-up of interventions
- An implementation intervention is “a single method or technique to facilitate change,”
- An implementation strategy is “an integrated set, bundle, or package of discreet implementation interventions ideally selected to address specific identified barriers to implementation success”

Bauer MS, Damschroder L, Hagedorn H, Smith J, Kilbourne AM. An introduction to implementation science for the non-specialist. BMC Psychol. 2015 Sep 16;3:32

Proctor EK. Implementation strategies: recommendations for specifying and reporting. Implementation Science 2013;8:139
USVA QUERI (US Department of Veterans Affairs; Quality Enhancement Research Initiative, QUERI)

Implementation strategies

- Examples of strategies at the provider level include education/training, audit-feedback, printed educational materials, computerized reminders and performance incentives
- Multifaceted, multilevel (including intrapersonal, interpersonal, organizational, community, and policy), tailored (planned following an investigation into the factors that explain current practice) implementation strategies

Types of strategies used to improve implementation in health

Main Actor and Areas of Intervention	Implementation Strategy Examples
Government <ul style="list-style-type: none"> Policy-making, oversight and regulation Public financing 	<ul style="list-style-type: none"> Policy reviews Governance strengthening and corruption reduction strategies Contracting with performance measures Decentralize public service provision Public financing incentives and rules (ways to raise revenues, pool funding, and payment mechanisms) Public education, behaviour change communication
Implementing and Provider Organizations <ul style="list-style-type: none"> Organizational improvement and accountability 	<ul style="list-style-type: none"> Quality improvement/quality assurance/performance management strategies: team problem-solving; develop and apply guidelines and standard operating procedures; regular supervision Provide financial incentives for teams and individuals based on performance Reorganize and/or integrate services Human resource management systems Facility management and logistics systems strengthening Strengthen financial management Marketing health services and products
Individual Providers and Front-line Workers <ul style="list-style-type: none"> Individual practices 	<ul style="list-style-type: none"> Continuing education and training Peer learning and support Job aids
Communities and Households <ul style="list-style-type: none"> Empowerment, participation, education Individual practices 	<ul style="list-style-type: none"> Community information and education: training community health workers; training of community members such as youth, mothers (in groups, home, mass media); social marketing and demand creation Strengthen inclusion and participation: community-managed services; community partnerships and co-management; community-owned services Strengthen local accountability: joint monitoring; provider accountability schemes; community-based information systems Local organizational capacity building: community mobilization; community boards and structures to oversee and manage Financial empowerment: community financing; in-kind subsidies and vouchers; community participatory budgeting; incorporation with income generating and micro-financing schemes Peer support for health services and healthy behaviours
Multiple Actors	<ul style="list-style-type: none"> Assess needs and constraints: constraints reduction plans Obtain broad-based support of stakeholders: engage powerful interest groups; coordinate with community organizations Flexible management processes and modification through stakeholder feedback

Measurement of implementation

- Implementation outcome variables (eg, fidelity, acceptability, coverage)
- Effectiveness outcome variables (eg, morbidity and mortality)
- Both effectiveness and implementation outcome variables
- Measured change in implementation outcome variables

Implementation Outcome	Working Definition*	Related terms**
Acceptability	The perception among stakeholders (e.g. consumers, providers, managers, policy-makers) that an intervention is agreeable	Factors related to acceptability: (e.g. comfort, relative advantage, credibility)
Adoption	The intention, initial decision, or action to try to employ a new intervention	Uptake, Utilization, Intention to try
Appropriateness	The perceived fit or relevance of the intervention in a particular setting or for a particular target audience (e.g. provider or consumer) or issue	Relevance, Perceived fit, Compatibility, Trialability, Suitability, Usefulness, Practicability
Feasibility	The extent to which an intervention can be carried out in a particular setting or organization	Practicality, Actual fit, Utility, Suitability for everyday use
Fidelity	The degree to which an intervention was implemented as it was designed in an original protocol, plan, or policy	Adherence, Delivery as intended, Treatment integrity, Quality of programme delivery, Intensity or dosage of delivery
Implementation cost	The incremental cost of the delivery strategy (e.g. how the services are delivered in a particular setting). The total cost of implementation would also include the cost of the intervention itself.	Marginal cost***
Coverage	The degree to which the population that is eligible to benefit from an intervention actually receives it.	Reach, Access, Service Spread or Effective Coverage (focusing on those that need an intervention and its delivery at sufficient quality, thus combining coverage and fidelity), Penetration (focusing on the degree to which an intervention is integrated in a service setting)
Sustainability	The extent to which an intervention is maintained or institutionalized in a given setting.	Maintenance, Continuation, Durability, Institutionalization, Routinization, Integration, Incorporation

Implementation outcome variables

David H. Peters, Nhan T. Tran, Taghreed Adam. Implementation research in health: a practical guide. Alliance for Health Policy and Systems Research, World Health Organization, 2013

Types of implementation research objectives, implementation questions, and research methods

Objective	Description	Implementation Question	Research methods and data collection approaches *
Explore	Explore an idea or phenomenon to make hypotheses or generalizations from specific examples	What are the possible factors and agents responsible for good implementation of a health intervention? For enhancing or expanding a health intervention?	Qualitative methods: Grounded theory, ethnography, phenomenology, case-studies and narrative approaches; key informant interviews, focus groups, historical reviews Quantitative: Network analysis, Cross-sectional surveys Mixed methods: Combining qualitative and quantitative methods.
Describe	Identify and describe the phenomenon and its correlates or possible causes	What describes the context in which implementation occurs? What describes the main factors influencing implementation in a given context?	Quantitative: Cross-sectional (descriptive) surveys, network analysis Qualitative methods: Grounded theory, ethnography, phenomenology, case-studies and narrative approaches; key informant interviews, focus groups, historical reviews Mixed methods: Both qualitative and quantitative inquiry with convergence of data and analyses
Influence	Test whether an intervention produces an expected outcome.		
With Adequacy	With sufficient confidence that the intervention and outcomes are occurring	Is coverage of a health intervention changing among beneficiaries of the intervention?	Before-after or time-series in intervention recipients only; Participatory action research
With Plausibility	With greater confidence that the outcome is due to the intervention	Is a health outcome plausibly due to the implemented intervention rather than other causes?	Concurrent, non-randomized cluster trials; health intervention implemented in some areas and not in others; before-after or cross-sectional study in programme recipients and non-recipients; Typical quality improvement studies
With Probability	With a high (calculated) probability that the outcome is due to the intervention	Is a health outcome due to implementation of the intervention?	Partially controlled trials: Pragmatic and cluster randomized trials; Health intervention implemented in some areas and not in others; Effectiveness-Implementation Hybrids
Explain	Develop or expand a theory to explain the relationship between concepts and the reasons for the occurrence of events, and how they occurred?	How and why does implementation of the intervention lead to effects on health behaviour, services or status in all its variations?	Mixed methods: Both qualitative and quantitative inquiry with convergence of data and analyses Quantitative: Repeated measures of context, actors, depth and breadth of implementation across subunits; network identification; can use designs for confirmatory inferences; Effectiveness-implementation hybrids; Qualitative methods: Case-studies, phenomenological and ethnographic approaches with key informant interviews, focus groups, historical reviews Participatory action research
Predict	Use prior knowledge or theories to forecast future events	What is the likely course of future implementation?	Quantitative: Agent-based modeling; Simulation and forecasting modeling; Data extrapolation and sensitivity analysis (trend analysis, econometric modeling) Qualitative: Scenario building exercises; Delphi techniques from opinion leaders

David H. Peters, Nhan T. Tran, Taghreed Adam. Implementation research in health: a practical guide. Alliance for Health Policy and Systems Research, World Health Organization, 2013

Regionalization of perinatal health care in the province of Santa Fe, Argentina*

Objective. Improve the performance of the regionalization policy in the province of Santa Fe, Argentina, as a strategy to improve perinatal health care by analyzing implementation processes and building consensus among decision makers and stakeholders around an action plan.

Methods. Implementation research was conducted using mixed methodology. A needs assessment established tracer indicators to measure adherence to the components of the policy. Actors were studied to identify the barriers and facilitators of implementation. Training was provided on the development of consensus- and evidence-based policies, through workshops in which policy briefs were prepared and through a deliberative dialogue.

Results. There were improvements in the number of births in appropriate hospitals and in the number of births in maternity hospitals with Essential Obstetric and Neonatal Care (EONC). Barriers were identified in the referral systems and in communication on policy, which resulted in an initial agreement on the need for guidelines and specific technical training on the transfer of babies and mothers.

Conclusions. The participation of health workers in identifying barriers and strategies to overcome them, and the use of tools to report this to management, permit the adoption of consensus- and evidence-based strategies to improve policy implementation