

WORKSHOP 2

IMPLEMENTATION SCIENCE

**Facilitators: Joanna Moullin
Linda Thomsen**

OUR PURPOSE AND AIM ?

To learn, discuss and adapt implementation theory including the factors, strategies and evaluations necessary to guide successful implementation efforts, including from a practice, organizational, and research perspective.

What are your interests in implementation and/or reasons for choosing the implementation workshop?

WORKSHOP FRAMEWORK

Phase 1	Wednesday afternoon (15:00-16:30)	Introduction to workshop and implementation science
Phase 2a	Wednesday afternoon (17:00-18:30)	Scope of workshop (PBL) Formation of groups
Phase 2b	Thursday all day (10:00-13:00; 15:30-18:30)	Content of workshop (Exploration and preparation stages of cases)
Phase 3	Friday morning (10:00-13:00)	Content of workshop (Operation and sustainability stages of cases)
Phase 4	Friday afternoon (14:00-15:30)	Critical appraisal/outlook

INTRODUCTION TO IMPLEMENTATION SCIENCE

SUMMARY

Background and terminology of Implementation Science

Implementation factors & strategies

Frameworks

- Active Implementation Frameworks
- Promoting Action on Research Implementation in Health Services (PARIHS)
- Consolidated Framework for Implementation Research (CFIR)
- Theoretical Domains Framework (TDF) & Behaviour Change Wheel (BCW)
- Quality Implementation Framework
- RE-AIM

Implementation research & design

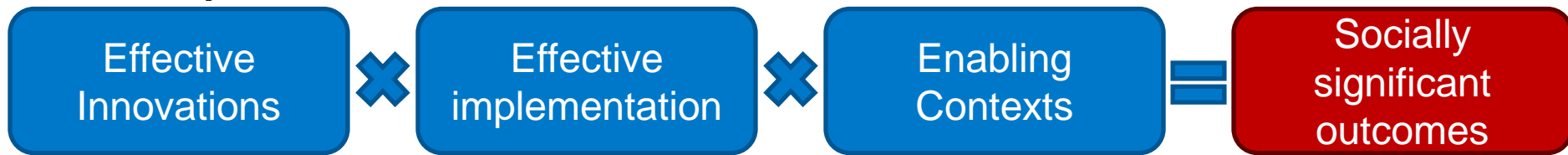
Implementation outcomes & impact

Resources

Framework for the Implementation of Services in Pharmacy (FISpH)

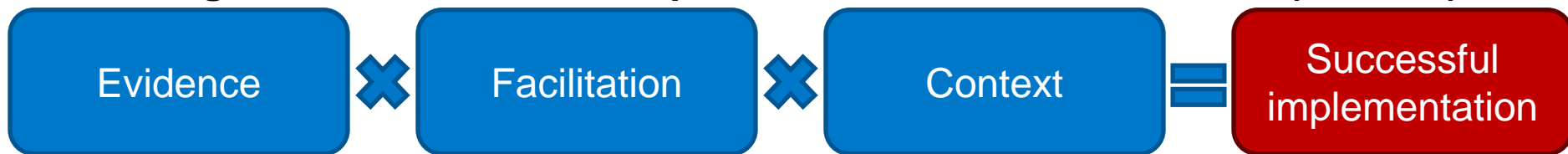
FORMULAS FOR SUCCESS

Active Implementation Frameworks



<http://nirn.fpg.unc.edu/learn-implementation/implementation-defined>

Promoting Action on Research Implementation in Health Services (PARIHS)



<http://www.implementationscience.com/content/supplementary/1748-5908-6-99-s3.pdf>

IMPLEMENTATION SCIENCE

The use of a purposeful, specific set of methods to promote the integration of research findings, evidence or a program of known dimensions into policy and/or practice.

Diffusion: Letting it happen

- Focus on the innovation and its adoption

Dissemination: Helping it happen

- Focus on practitioner and contextual readiness to understand and use the innovation

Implementation (Application): Making it happen

- Focus on how to use the innovation as intended to achieve outcomes

Knowledge Translation (transfer, exchange)

“Individuals cannot benefit from interventions they do not experience”

ADOPTION

Implementation Gaps

REACH

(know-do-gap)

IMPLEMENTATION (FIDELITY)

Knowledge to Action

EFFECTIVENESS

Science to Service

MAINTENANCE

Research to practice

Schroeder, J.A (2011). *Integrating implementation science, practice and policy*. National Implementation Research Network

<http://www.re-aim.hnfe.vt.edu/>

WHAT WE KNOW DOES NOT WORK

Single implementation strategies are not enough:

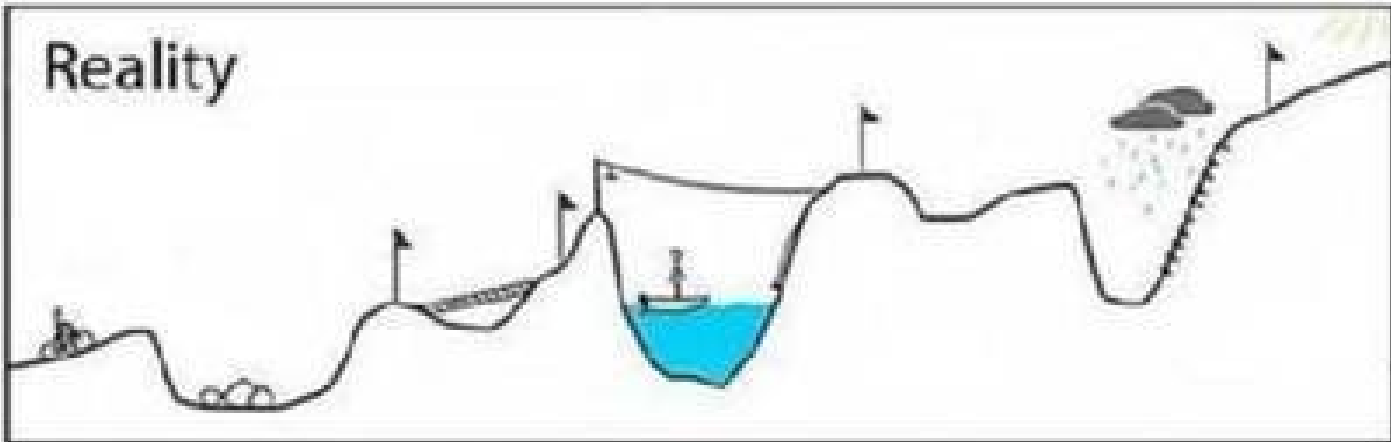
- Laws and policy changes
- Funding
- Access to or communication (diffusion and dissemination) of information
- Training alone
- Implementation without changing support roles and functions

A combination of multiple strategies across all levels affecting the implementation process are needed.

Your plan



Reality



THEN WHAT DOES WORK?

Must consider context and influencing factors unique to each implementation effort and each setting

Multi-component individualised implementation interventions

Moving towards evidence-based strategies

- Training
- Coaching/facilitation
 - Supervision “More practice, less preach” (role-play over modelling)
(Bearman *et al.* & The Research Network on Youth Mental Health 2013)
- Feedback-systems
- Incentives
- Leadership (as well as champions and opinion leaders)
- Continuous Quality Improvement

IMPLEMENTATION RESEARCH

Scientific investigations that support the movement of innovations into routine care resulting in recommendations for faster take-up of improvements and spread by different people. Includes addressing the level to which health interventions, such as professional pharmacy services, can fit within real-world public health and clinical service systems, including community pharmacy.

STUDY DESIGN

- Mixed Methods
- Hybrid design
- Stepped-Wedge
- Comparative-effectiveness
- Realist evaluation
- Pragmatic
- Participatory Action Research

STEPPED-WEDGE

Cross-over design

<u>1</u>	<u>2</u>
X	O
X	O
X	O
O	X
O	X
O	X

Stepped-Wedge

<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>
O	X	X	X	X
O	O	X	X	X
O	O	X	X	X
O	O	O	X	X
O	O	O	O	X

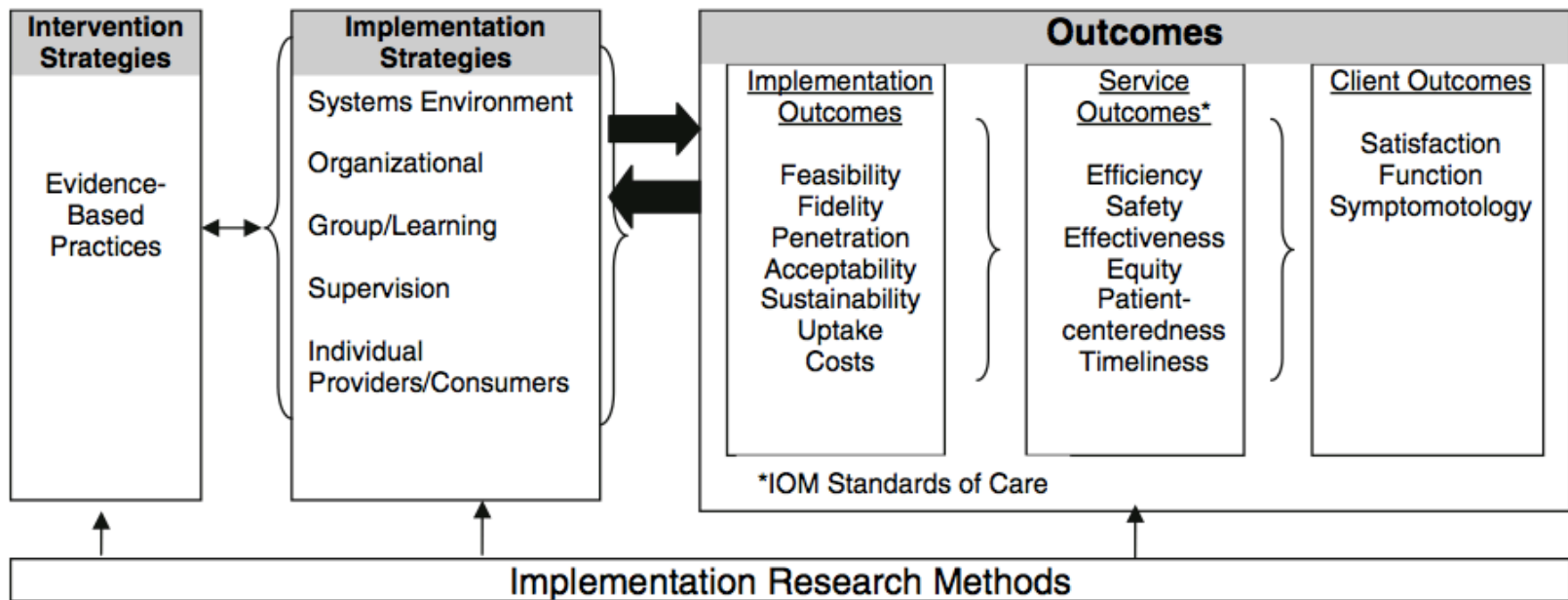


Fig. 1 Conceptual model of implementation research

Implementation outcomes: The effects of deliberate and purposive actions to implement new treatments, practices, and services

IMPLEMENTATION FRAMEWORKS

- Summarise key concepts involved in the process of implementation
- Describe the influences
- Provide specific steps that may help the planning and execution of implementation
- Detail methods to monitor and evaluate progress
- Guide implementation program for researchers, policy makers, professional organisations and practitioners

ACTIVE IMPLEMENTATION

What: Defined usable innovations including essential functions and operational definitions with practical performance assessment criteria (Hexagonal tool)

Where: Enabling contexts/hospitable environment (barriers and facilitators)

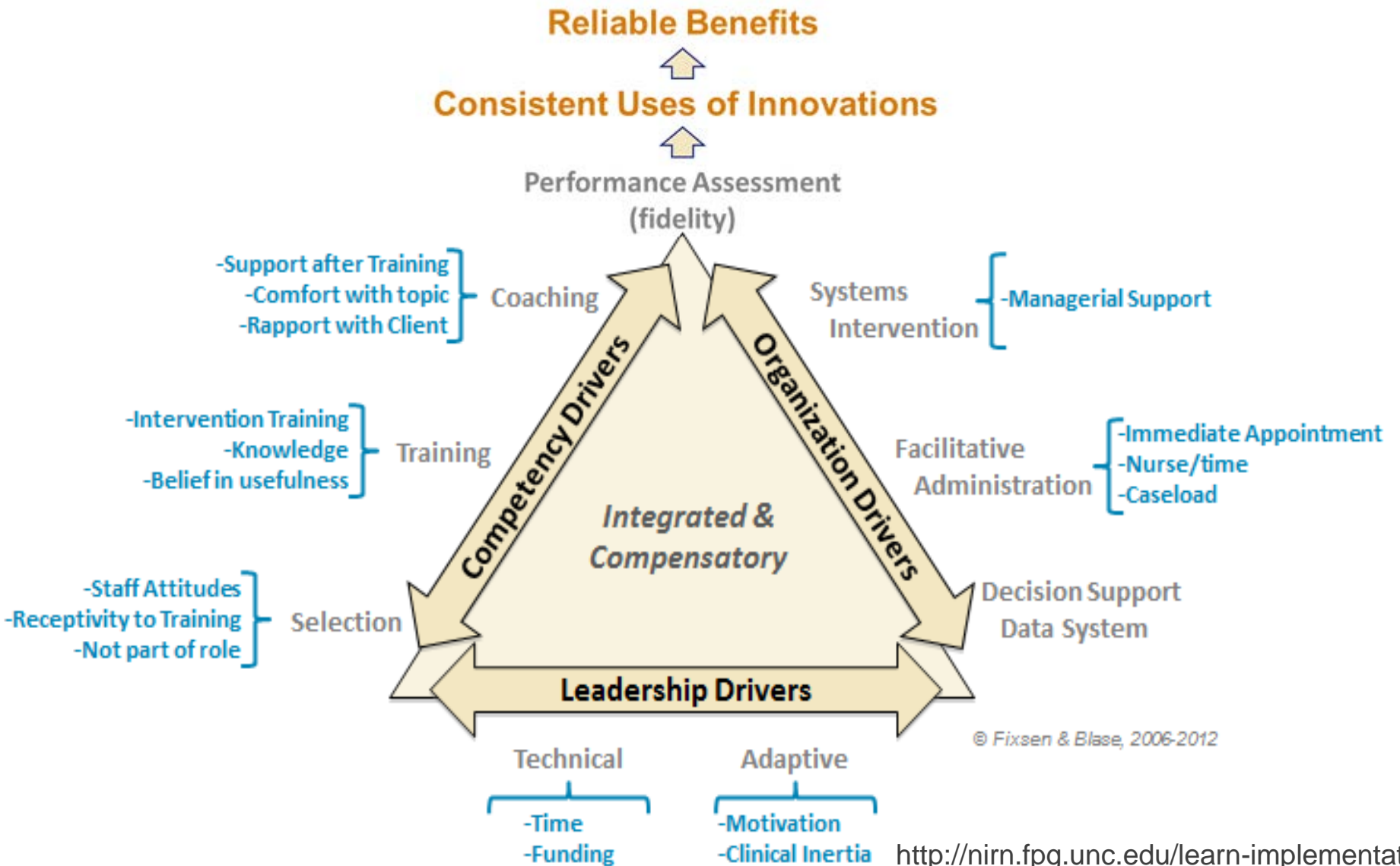
How:

- Active Implementation Stages
- Implementation Drivers
- Improvement Cycles
- Scaling-up Logic Model

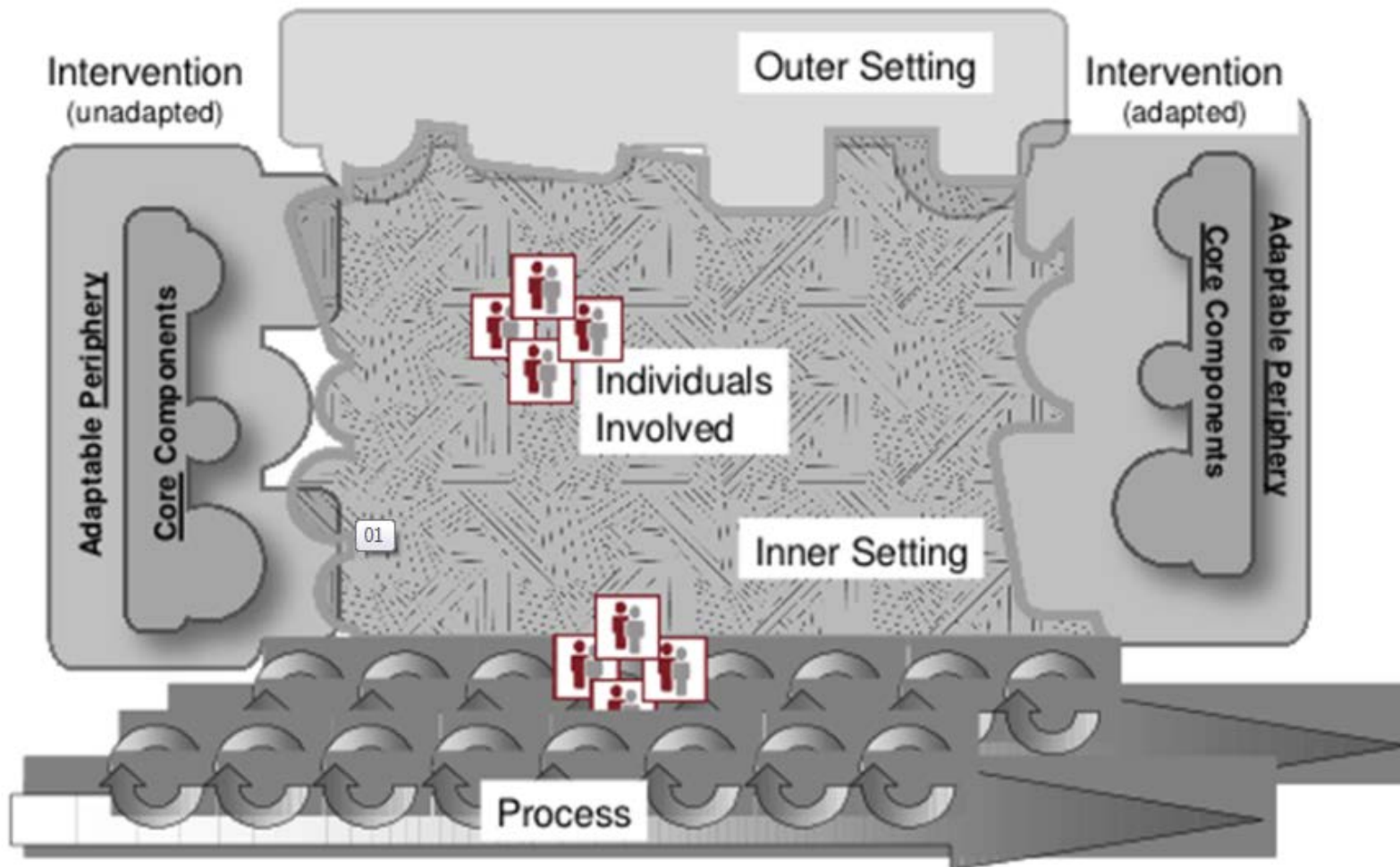
Who: Implementation Teams

- Developers and purveyors of individual evidence-based programs.
- Intermediary organizations that help others implement a variety of evidence-based programs.
- Developed on site with support from groups outside the organization or system.

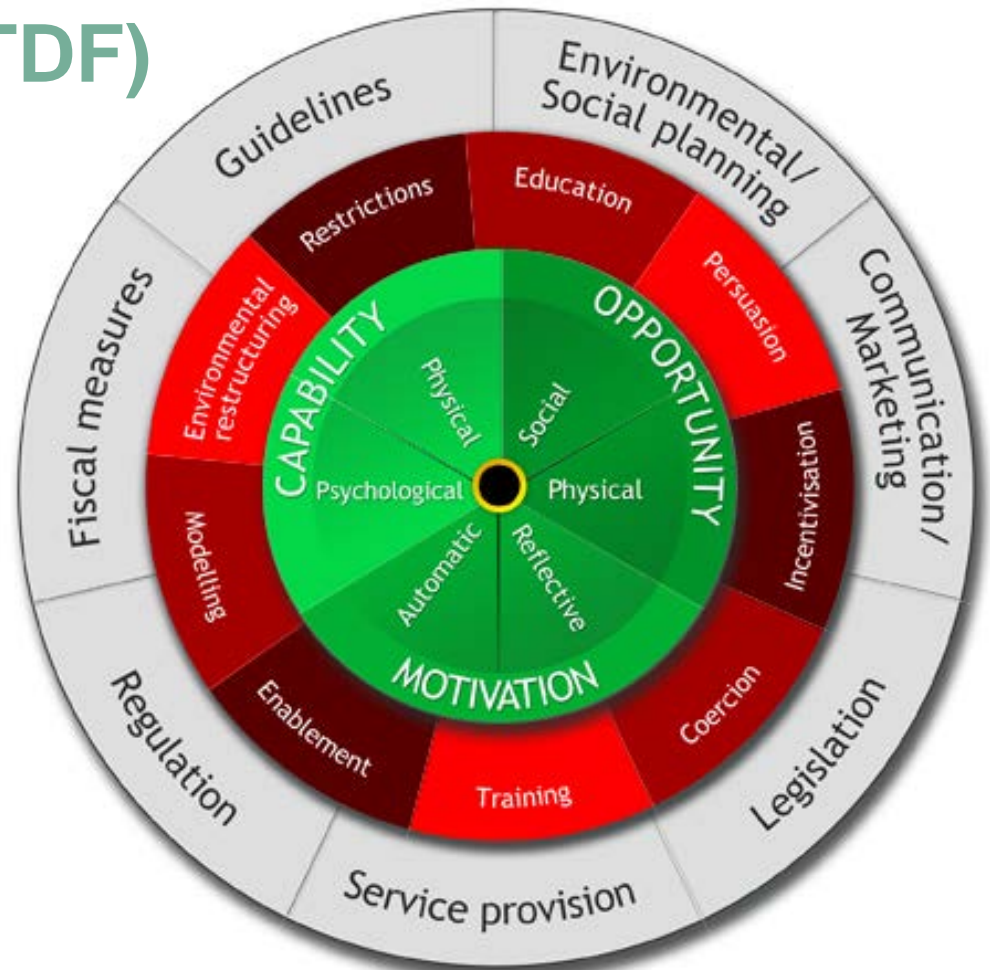
ACTIVE IMPLEMENTATION: DRIVERS



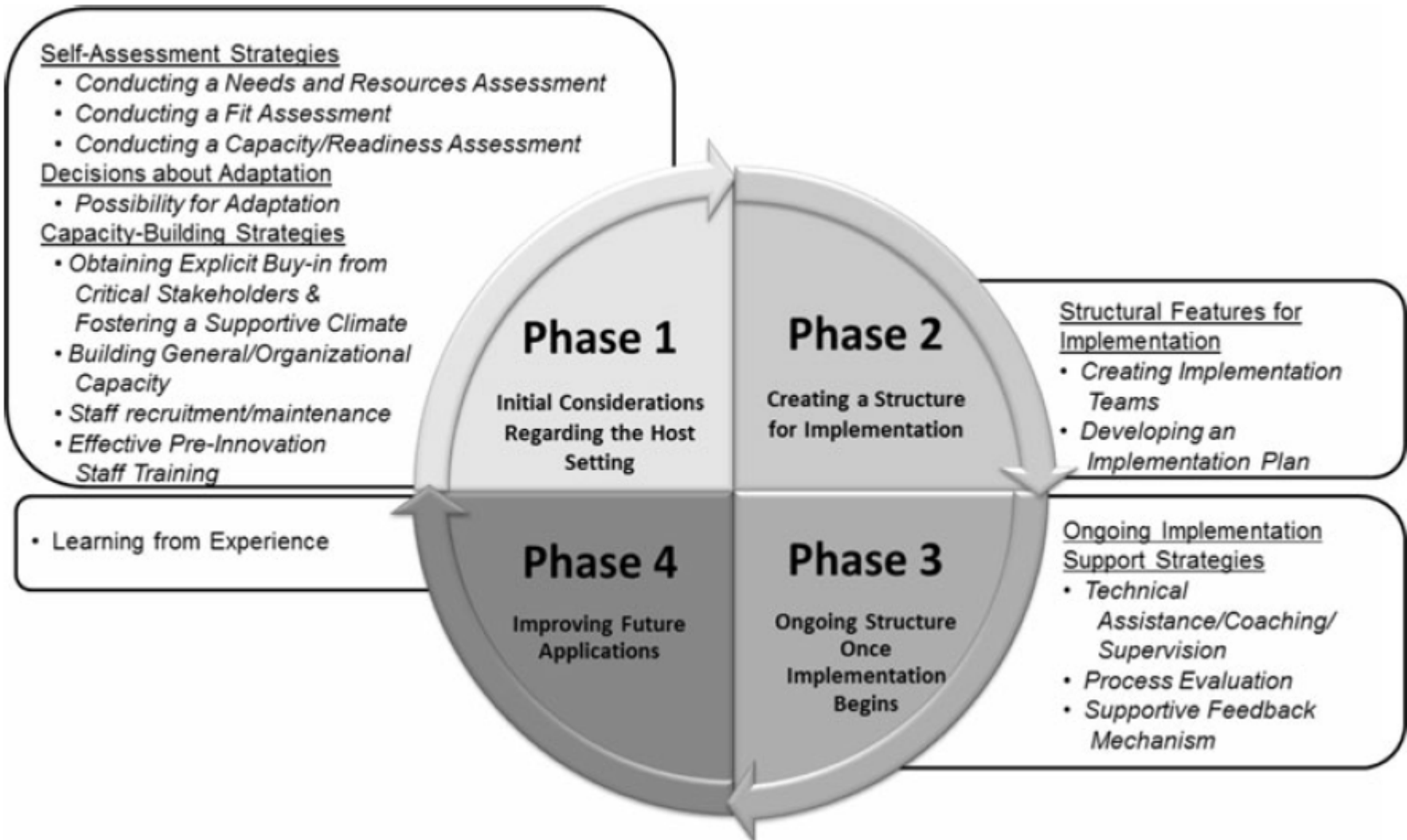
CONSOLIDATED FRAMEWORK FOR IMPLEMENTATION RESEARCH (CFIR)



BEHAVIOURAL CHANGE WHEEL (BCW), BEHAVIOURAL CHANGE TECHNIQUE TAXONOMY & THEORETICAL DOMAINS FRAMEWORK (TDF)



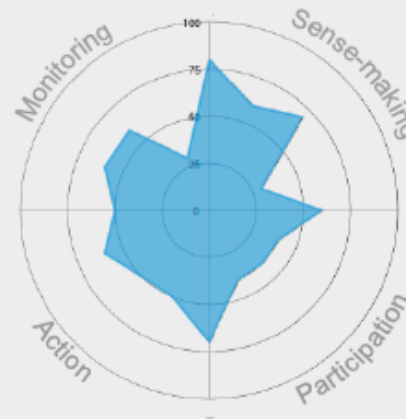
QUALITY IMPLEMENTATION FRAMEWORK



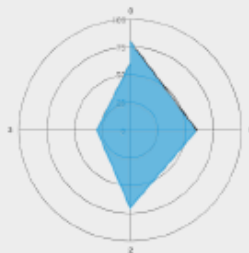
NORMALISATION PROCESS THEORY

Results

The Radar Plots show the strength that you have assigned to each variable. Use them as heuristic tools to think through an implementation or integration process. Positive responses extend further out from the centre than negative ones. Look for areas where the responses are closer to the centre. These may tell you that participants cannot make sense, or have not signed up to the innovation. Perhaps they cannot enact it in a way that works for them, or cannot assess its effects and their value. If the responses are positive, the opposite may be true.

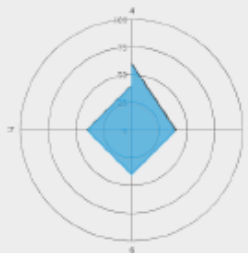


Sense-making



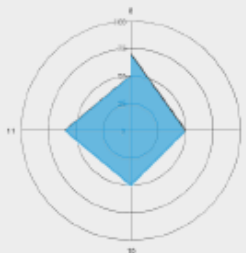
1. Participants distinguish the intervention from current ways of working.
2. Participants collectively agree about the purpose of the intervention.
3. Participants individually understand what the intervention requires of them.
4. Participants construct potential value of the intervention for their work.

Participation



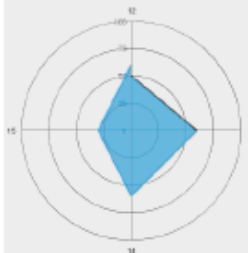
5. Key individuals drive the intervention forward
6. Participants agree that the intervention should be part of their work.
7. Participants buy in to the intervention.
8. Participants continue to support the intervention.

Action



9. Participants perform the tasks required by the intervention.
10. Participants maintain their trust in each other's work and expertise through the intervention.
11. The work of the intervention is appropriately allocated to participants.
12. The intervention is adequately supported by its host organization

Monitoring



13. Participants access information about the effects of the intervention.
14. Participants collectively assess the intervention as worthwhile.
15. Participants individually assess the intervention as worthwhile.
16. Participants modify their work in response to their appraisal of the intervention.

RE-AIM

The RE-AIM framework is designed to enhance the quality, speed, and public health impact of efforts to translate research into practice in five steps:

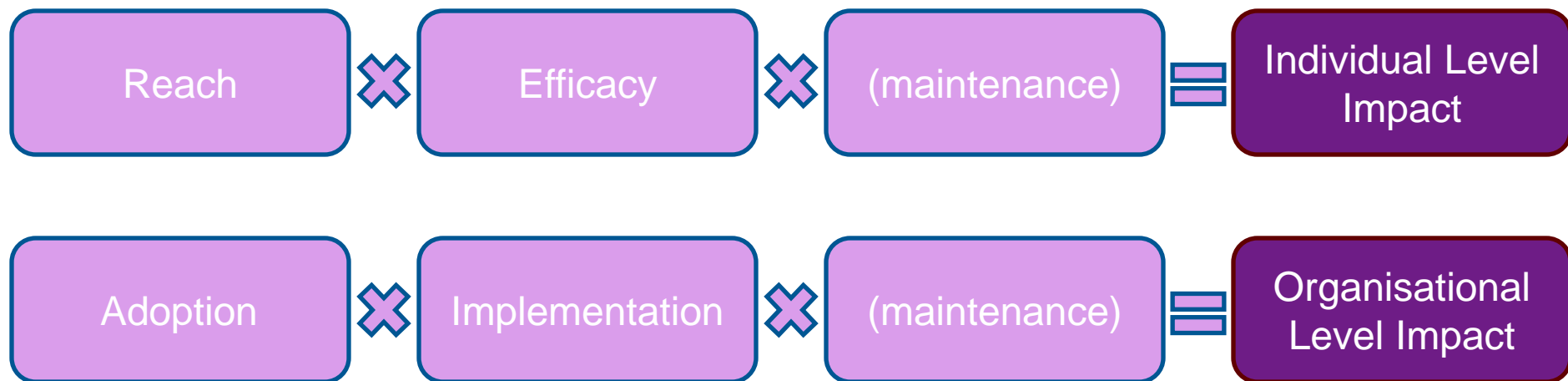
Reach your intended target population

Efficacy or efficacy

Adoption by target staff, settings, or institutions

Implementation consistency, costs and adaptations made during delivery

Maintenance of intervention effects in individuals and settings over time



SUSTAINABILITY

The extent to which a program or policy becomes institutionalized or part of the routine organizational practices and policies.

Maintenance

At the individual level, maintenance has been defined as the long-term effects of a program on outcomes after 6 or more months after the most recent intervention contact.

Sustainability

Sustaining all, some, or none of the original activities that the organization conducted when it was initially funded.

FIDELITY V ADAPTATION

Conservatives

- Implementation is only about evidence-based proven interventions
- Must strictly follow the study protocol or guideline

Progressives

- “core” & “adaptable” need to give guidance

Adaptation options:

(1) The innovation (ie. the pharmacy service or EBP)

- “Targeted” adaptation
 - Adapting the service for a group that share similar characteristics
- “Tailored” adaptation
 - Adapting for an individual-personalising

(2) The implementation program/strategies (ie. way of implementing the innovation)

= Translate the intervention for a context, not “copying to the letter”

RESOURCES

- **World Health Organization (WHO)**
The Alliance for Health Policy and Systems Research (AHPSR)
<http://www.who.int/alliance-hpsr/projects/implementationresearch/en/>
The Implementation Research Platform (IRP)
<http://www.implementationresearchplatform.org/>
- **Cochrane Effective Practice and Organisation of Care Group (EPOC)**
<http://epoc.cochrane.org/>
- **Society for Implementation Research Collaboration (SIRC)**
<http://www.societyforimplementationresearchcollaboration.org/>
- **National Implementation Research Network (NIRN)**
<http://nirn.fpg.unc.edu/>
- **Knowledge Translation Canada**
<http://ktclearinghouse.ca/ktcanada>
- **Centre for Effective Services (CES) Dublin**
<http://www.effectiveservices.org/implementation/implementation>

RESOURCES

- Global Implementation Initiative <http://globalimplementation.org/>
- European Implementation Collaborative <http://www.implementation.eu/>
- UK Implementation Network (UK-IN) <http://uk-in.org.uk/index.html>
- Australasian Implementation Network <http://implementationaustralasia.net/>
- Implementation Network <http://www.implementationnetwork.com>
- Colorado Implementation Collaborative <http://www.coloradoimplementation.com/>
- Nordic Implementation Interest Group
<http://www.imh.liu.se/implementering-och-larande/nordic-implementation?l=en>
- Triangle Implementation Research Group
- California Implementation Symposium
- Global Conference on Research Integration and Implementation
- NCI: National Cancer Institute Implementation Science
<http://cancercontrol.cancer.gov/IS/index.html>
- Canadian Institute of Health Research: <http://www.cihr-irsc.gc.ca/e/39033.html>

RESOURCES

- Normalisation Process Theory (NPT) <http://www.normalizationprocess.org/>
- GEM D& I <https://www.gem-beta.org/public/wsoverview.aspx?cat=8&aid=0&wid=11>
- Society for Implementation Research Collaboration (SIRC) Instrument Project <http://www.societyforimplementationresearchcollaboration.org/sirc-projects/sirc-instrument-project/>
- Consolidated Framework for Implementation Research <http://cfirguide.org/>
- Knowledge Translation (KT)Wiki <http://whatiskt.wikispaces.com/>
- Behaviour Change Wheel (Theoretical Domains Framework) <http://www.behaviourchangewheel.com/>
- Quality Enhancement Research Initiative (QUERI) <http://www.queri.research.va.gov/>
- Ontario Centre of Excellence for Child and Youth Mental Health <http://www.excellenceforchildand youth.ca/resource-hub/learning-modules>
- Institute for Healthcare Improvement: Break Through Series <http://www.ihl.org/resources/Pages/IHIWhitePapers/TheBreakthroughSeriesIHIsCollaborativeModelforAchievingBreakthroughImprovement.aspx>
- National Collaborating Centre for Methods and Tools <http://www.nccmt.ca/>
- Centre for Health Education Dissemination and Implementation Research <http://www.research-practice.org/default.aspx>

RESOURCES – SOCIAL MEDIA

- **Twitter**

@ImplementSci
@diportal_unc
@CIHR_IRSC
@effectiveserv
@ColmpC

@gic
@researchimpact
@ImpTriangle
@ImplementCollab
@KTCanada

@ImpScience
@UK_ImpNet
@implement_aus
@GlobalImplement
@PharmImp

#impsci

#implementationscience **#pharmimp**

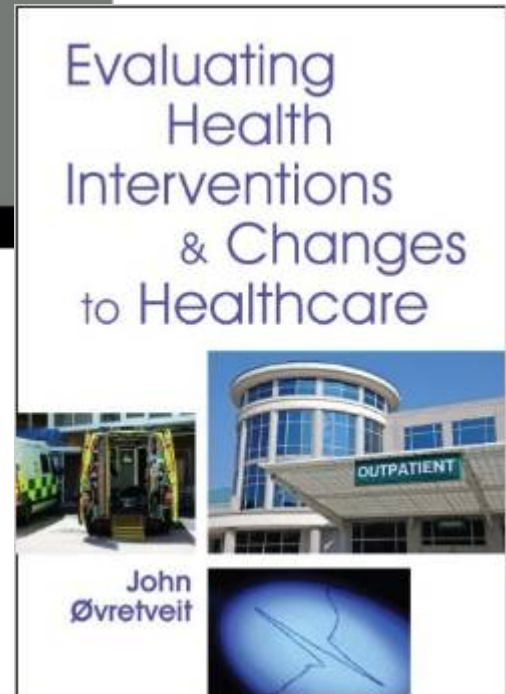
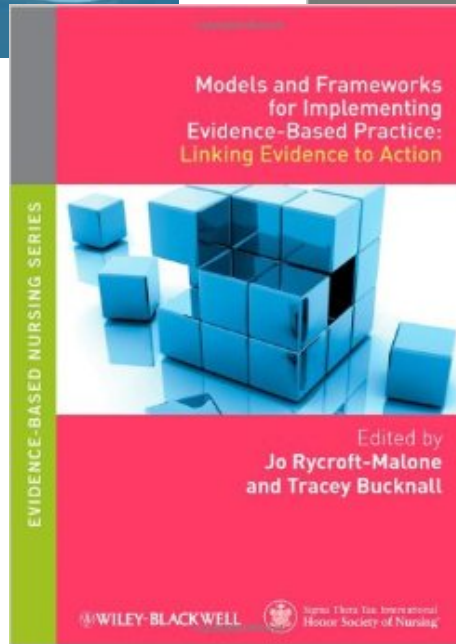
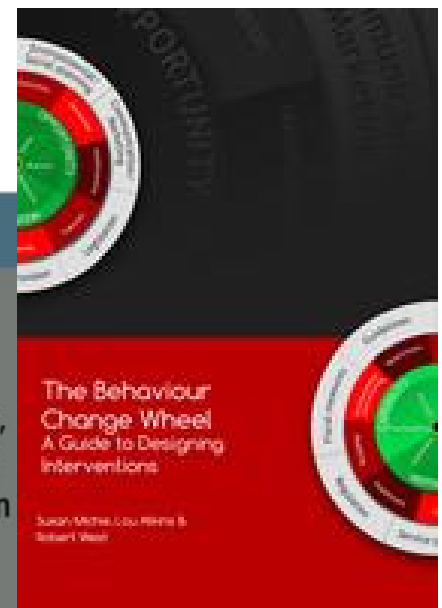
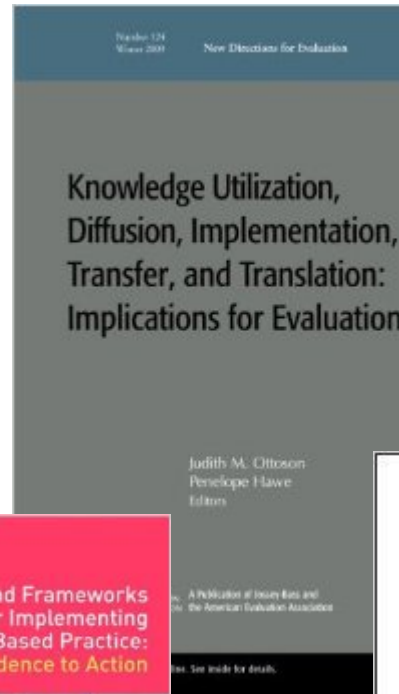
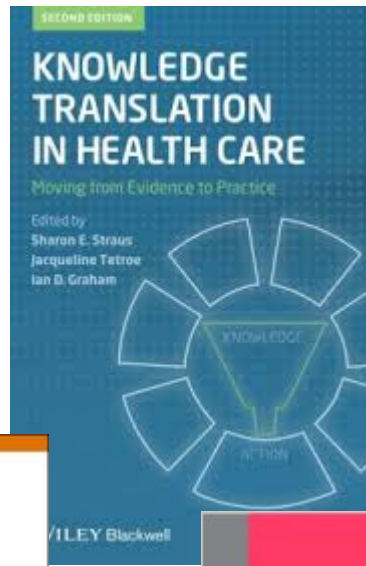
#implementation

#impsciau

- **Youtube** “implementation science”

- **LinkedIn**

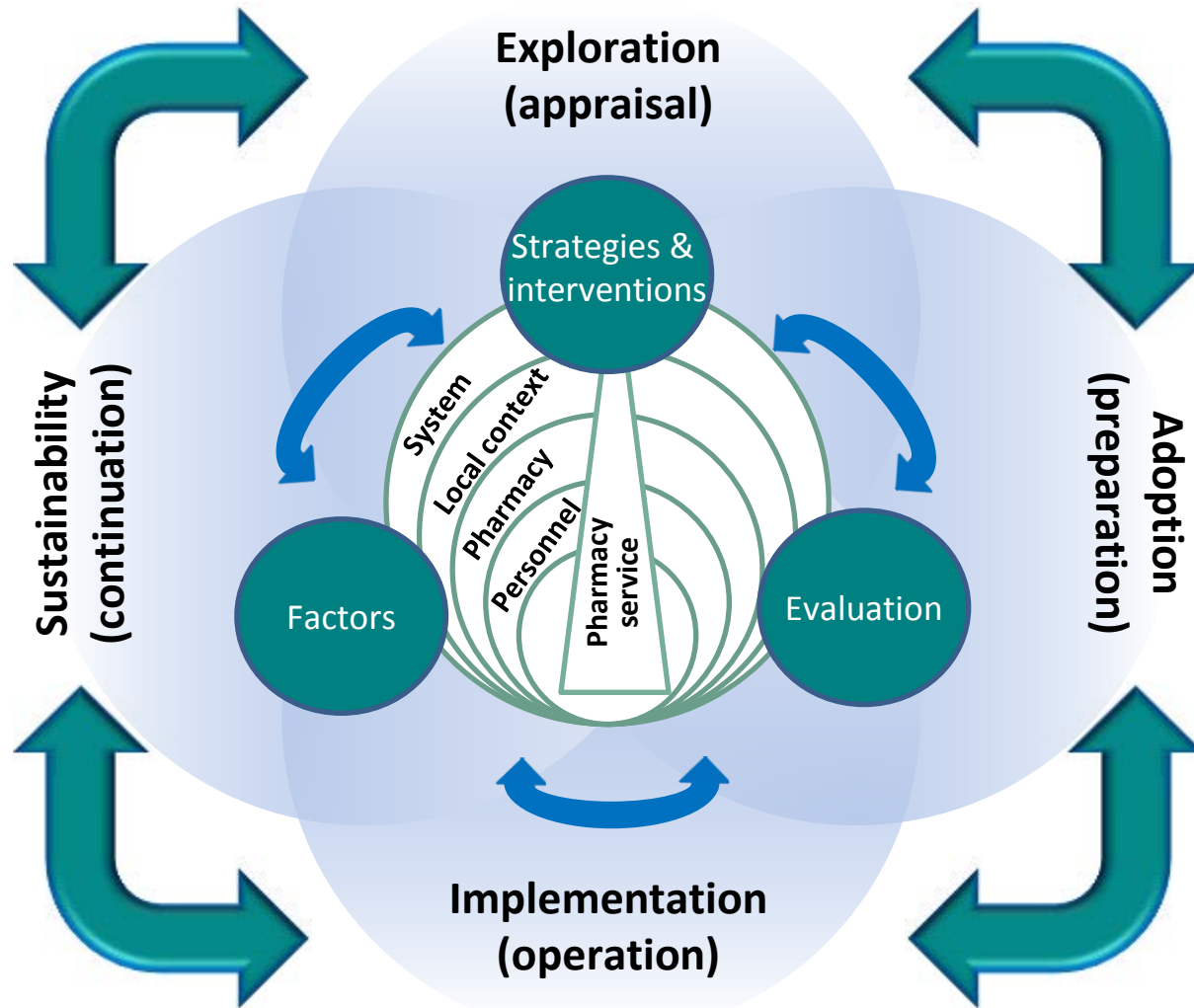
RESOURCES - BOOKS



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FRAMEWORK FOR THE IMPLEMENTATION OF SERVICES IN PHARMACY (FISpH)

FRAMEWORK FOR THE IMPLEMENTATION OF SERVICES IN PHARMACY (FISpH)



**Development or
Discovery (awareness)**

**Exploration
(appraising)**

Strategies

System

Local setting

Pharmacy(s)

Individuals

Service

Factors

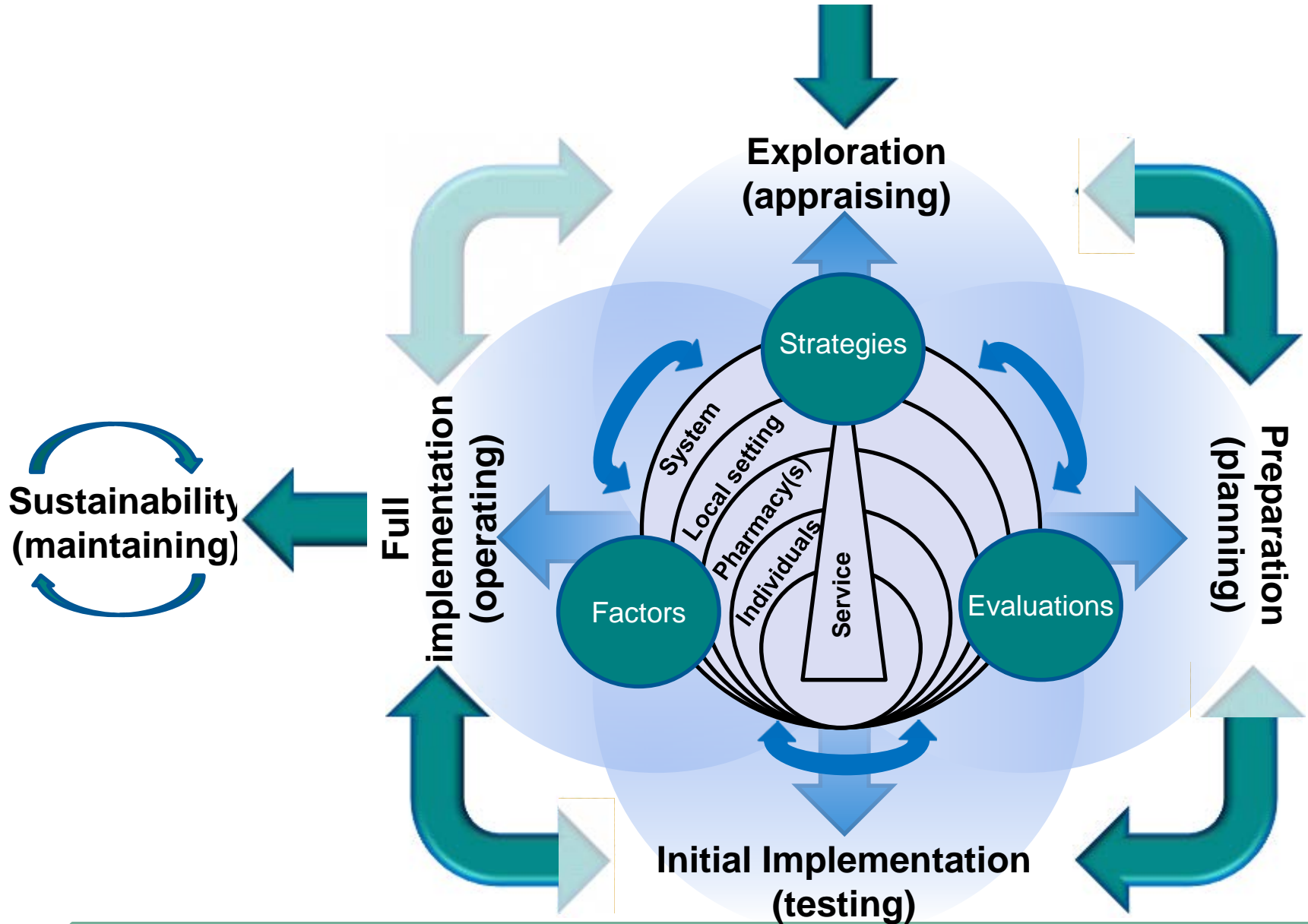
Evaluations

**Preparation
(planning)**

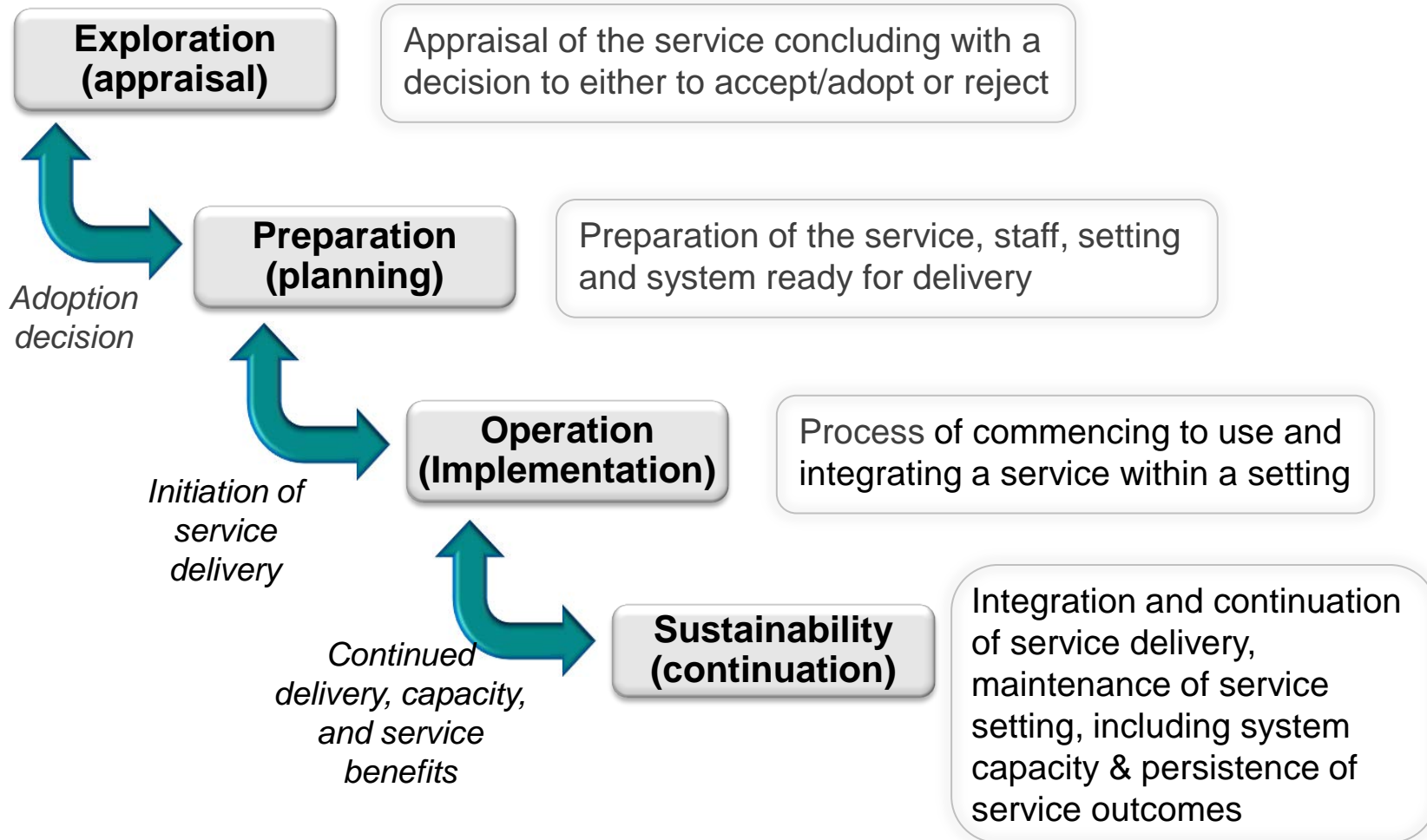
**Initial Implementation
(testing)**

**Full
implementation
(operating)**

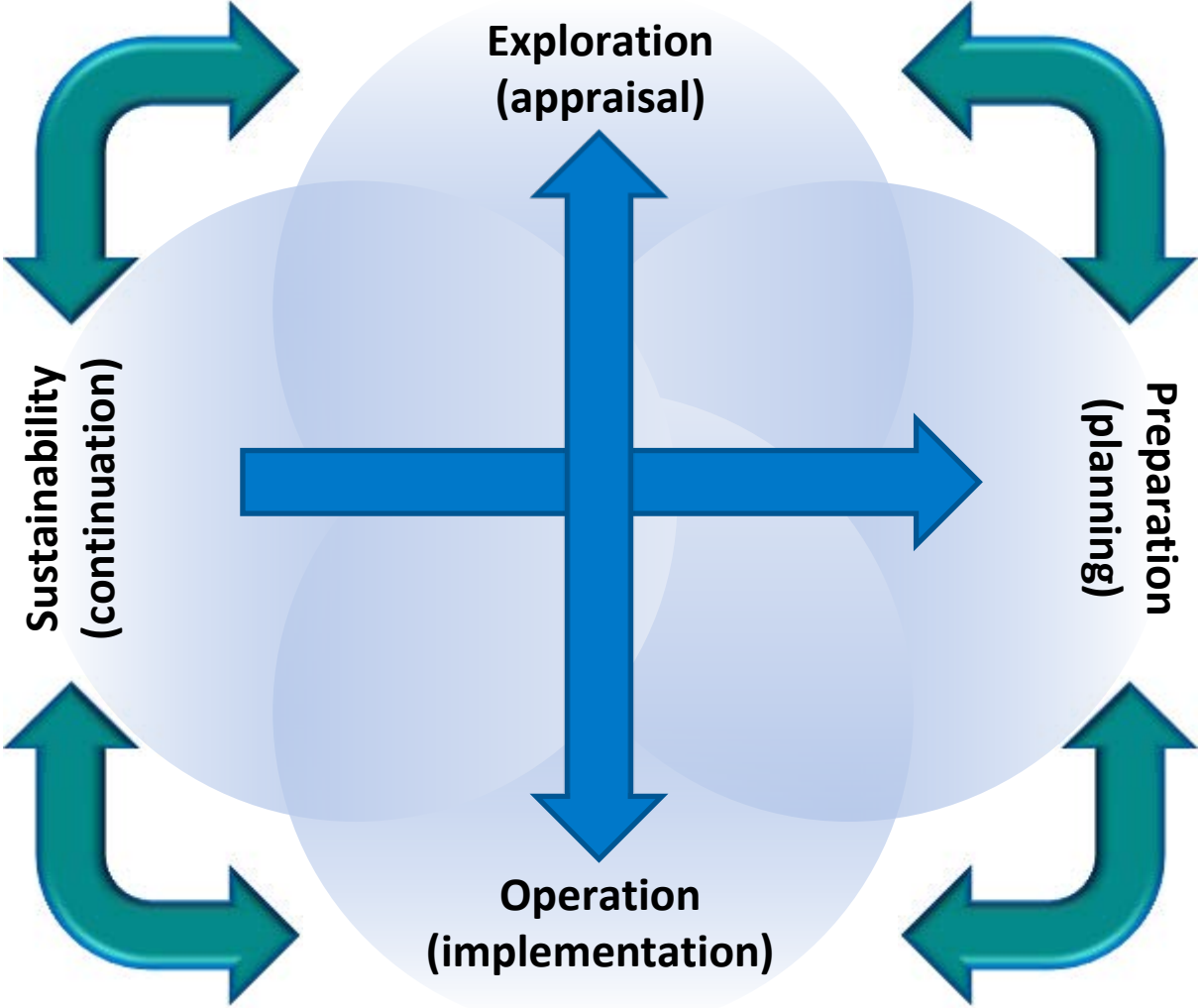
**Sustainability
(maintaining)**



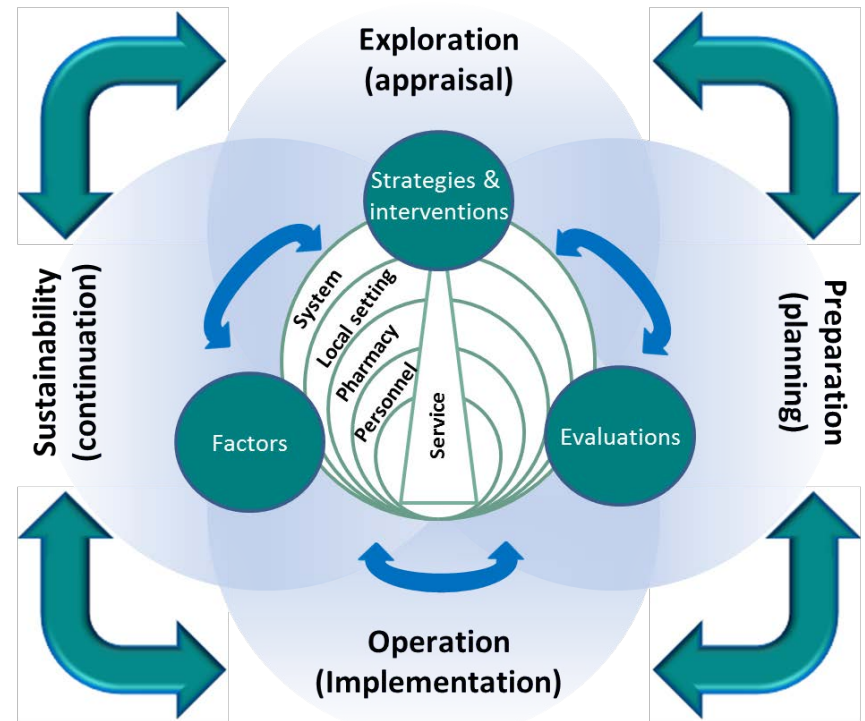
STAGES



STAGES

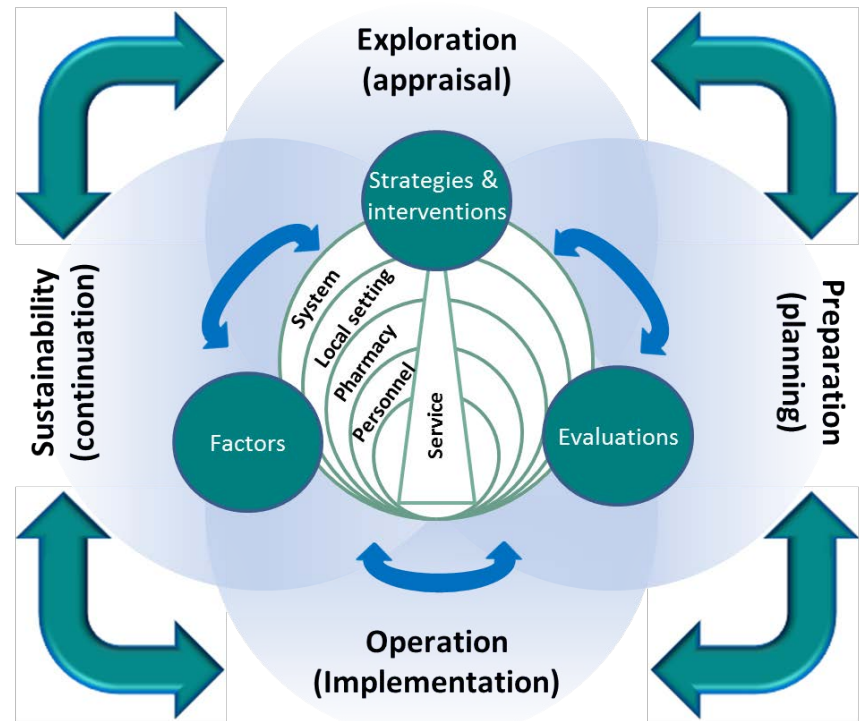


FACTORS



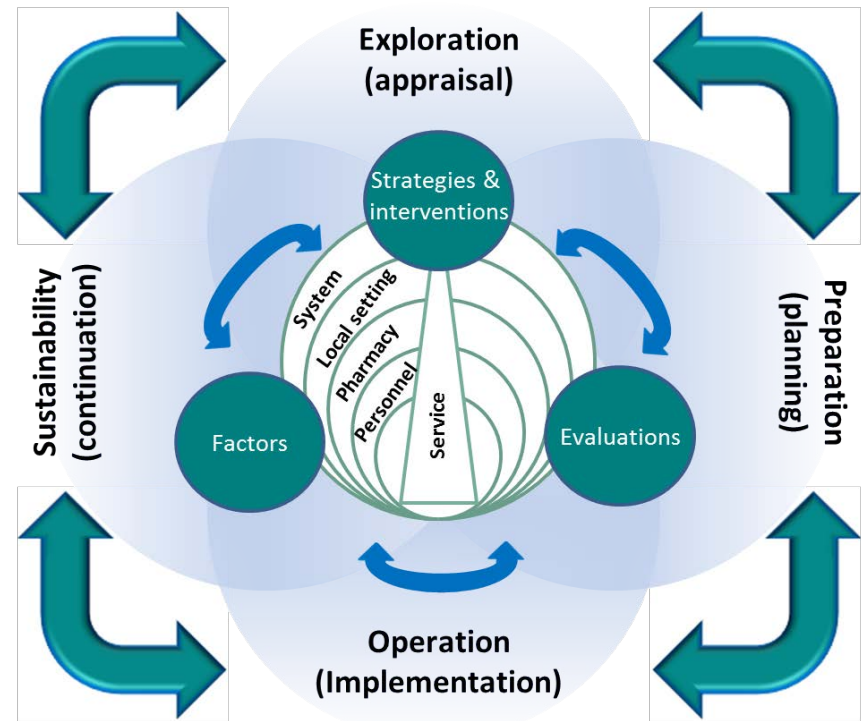
- Also termed barriers or facilitators
- Effect the implementation process either positively or negatively
- Assess factors at every stage of the implementation process for every domain
- Detailed checklists and questionnaires for determining and classifying factors exist

STRATEGIES & INTERVENTIONS



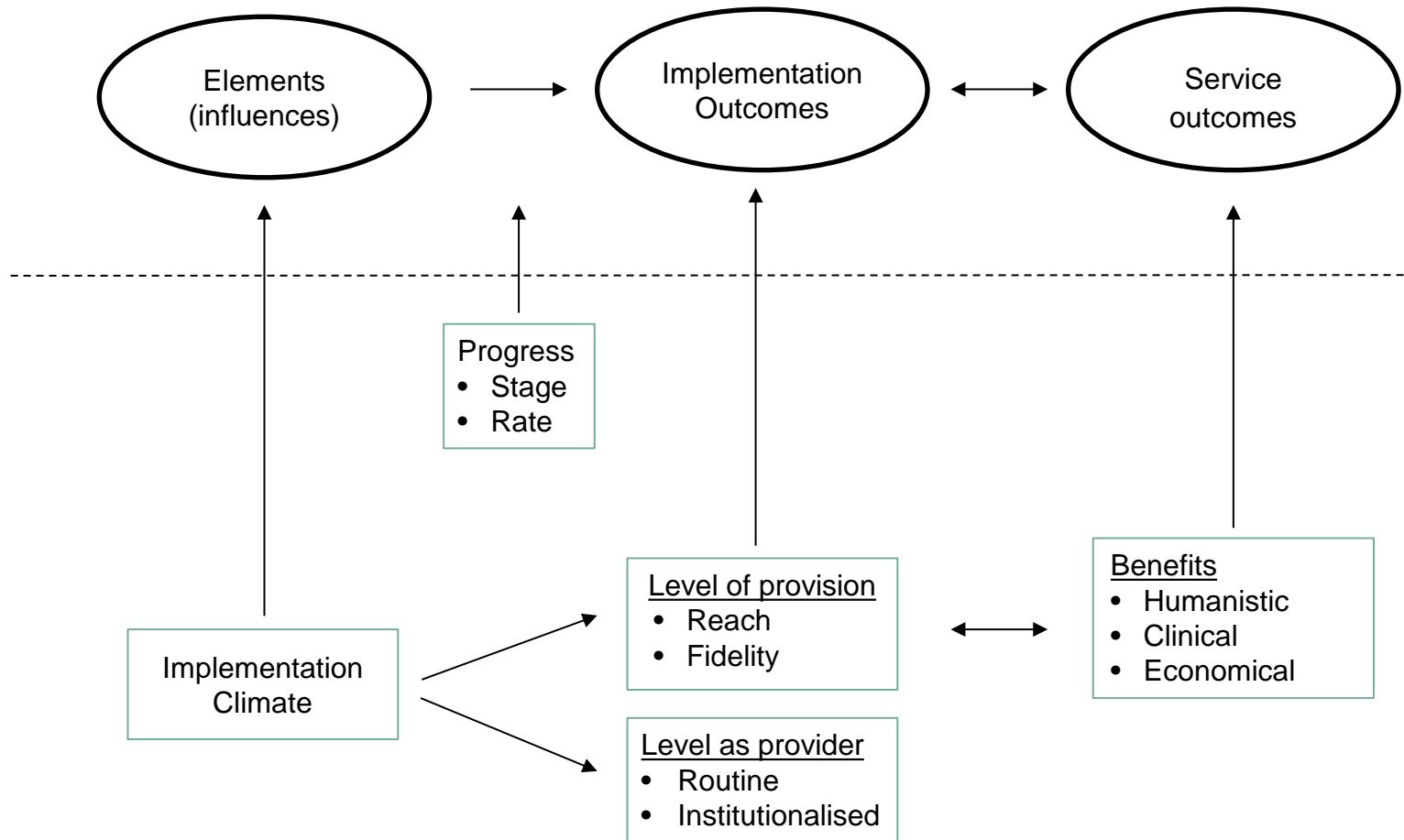
- Strategies are targeted towards building competency/ability, a supportive pharmacy environment and leadership for ongoing implementation and sustainability
- Tailored interventions are determined to utilise the facilitators and overcome barriers during for each step of the process

EVALUATIONS



- Indicators of the movement through the stages
- Measures of the factors and change in factors (e.g. skills and return on investment)
- Formative process evaluation
- Evaluation of the strategies and interventions (implementation program)
- Measurement of implementation and service outcomes

IMPLEMENTATION MEASUREMENT



LEVEL OF PROVISION

Implementation
Outcomes

- REACH -

Number of services performed and number ongoing as percent of potentially eligible participants (a) invited (b) commenced but stopped (d) declined

- FIDELITY -

The extent to which the service is performed as originally designed. Components of fidelity include adherence, dose, quality, patient responsiveness, program differentiation, adaptation.

LEVEL AS SERVICE PROVIDER

Implementation
Outcomes

- ROUTINISATION -

Degree the new service has become a part of everyday practice.

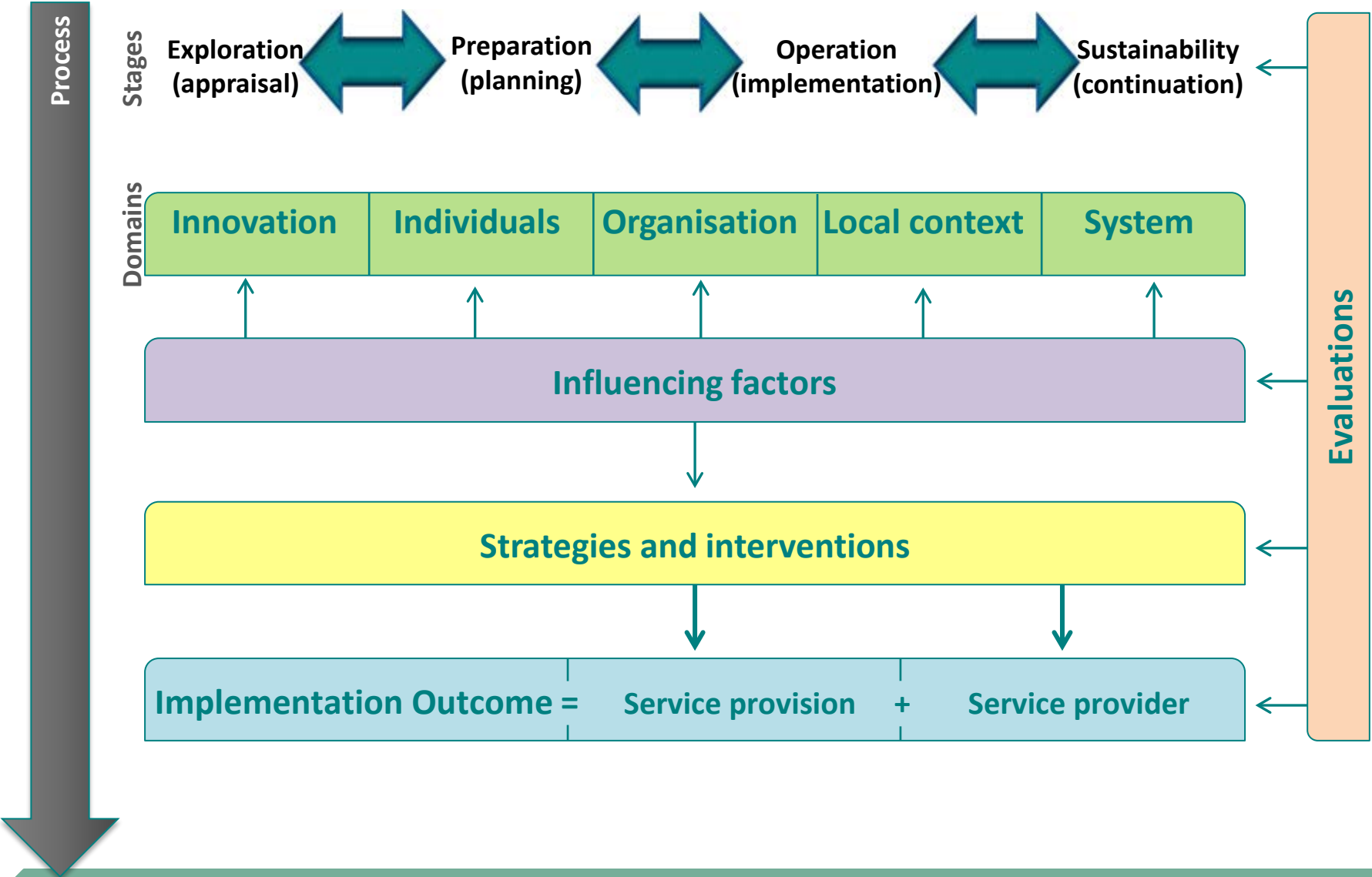
- INSTITUTIONALISATION -

Conditions that encourage, assist and enable service delivery.

PHARMACY PRACTICE & PHARMACEUTICAL CARE

- We need to decide what innovations/services to implement?
- Define what are the core aspects of these services and what are their operation definitions?
- What conditions are necessary or factors should be considered to aid the implementation effort?
- Which strategies will give us the greatest implementation success leading to impact on population health?
- What outcomes should be tracked?
- How long will it take to show progress?

SUMMARY



WORKSHOP FORMAT

PROBLEM-BASED LEARNING

- ▶ **Develop an experiential & theoretically based implementation program or protocol**

PROBLEM BASED LEARNING

- Implementation program and/or protocol to take back to your workplaces to increase implementation of an adherence service
- Use a case study to share expert advice and experiences
- Use active learning and participation process
(Problem based learning)

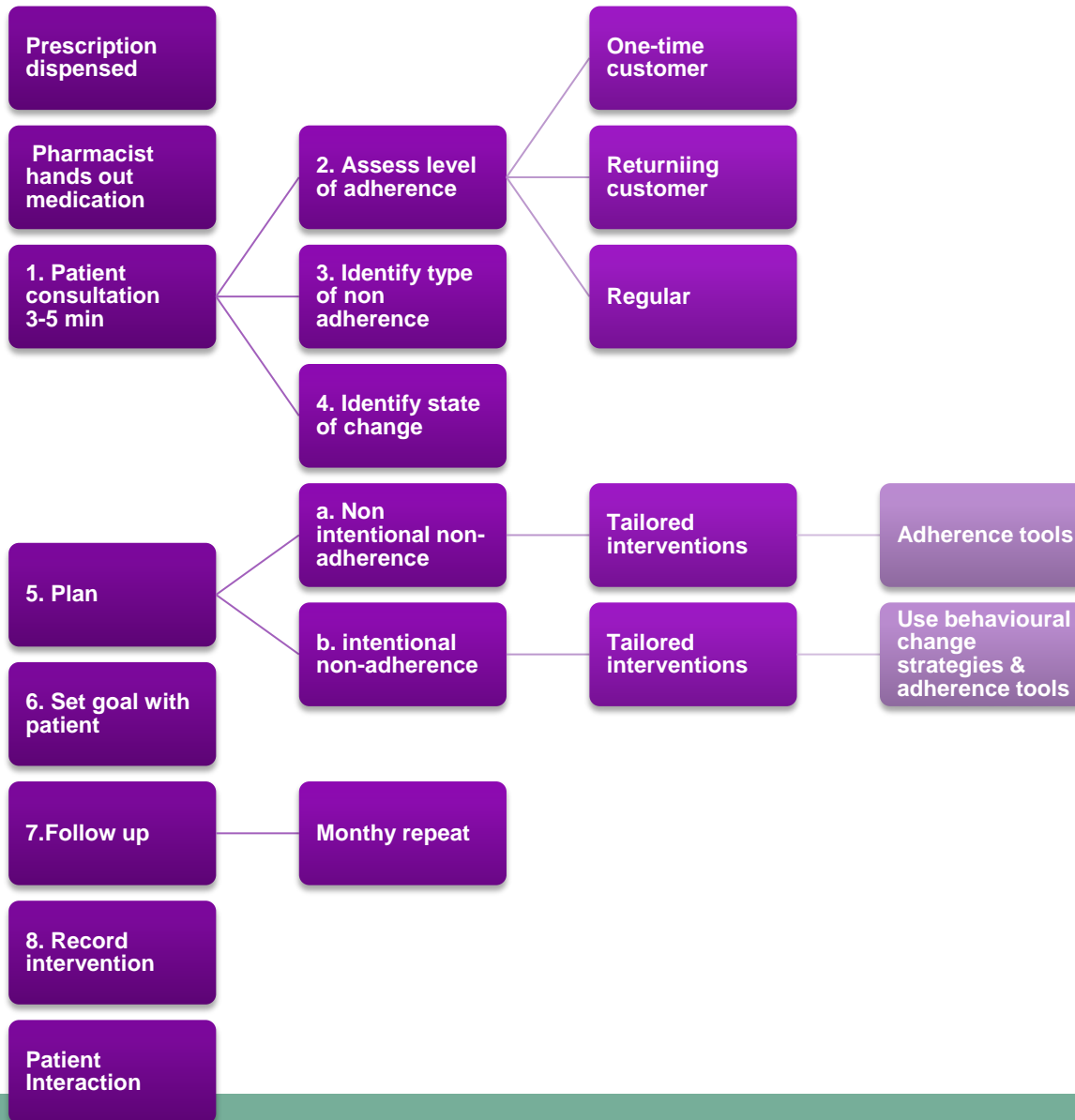
CASE STUDIES

1. Family-owned 'traditional' community pharmacy
2. Large 'corporate' community pharmacy
3. Pharmacy professional body/membership organisation
4. Research team

ADHERENCE SERVICE

- The adherence service involves the interaction between the service providers (pharmacists and/or pharmacy technicians, assistants etc.) and patients.
- The adherence service is centred on behavioural change of the patient.
- The service aims to have pharmacist interacting with patient for 3-5 minutes each time a prescription medication is handed out.
- Primary objective: to improve patient adherence to improve health outcomes.
- Secondary objectives: pharmacy based targets
 1. **One-time customer:** new customer or one visit over 6 month period
Objective: customer to return after their first visit (i.e. convert first-timer to being a returning customer, thus decreasing the number of customers who do not return)
 2. **Returning customer (but not regular):** customer with 2-4 visits to the store over 6 month period
Objective: increase the number of visits over a period of 6 months
 3. **Regular customer:** customer with 5-6 visits to the store over 6 month period
Objective: maintain customer loyalty

ADHERENCE SERVICE

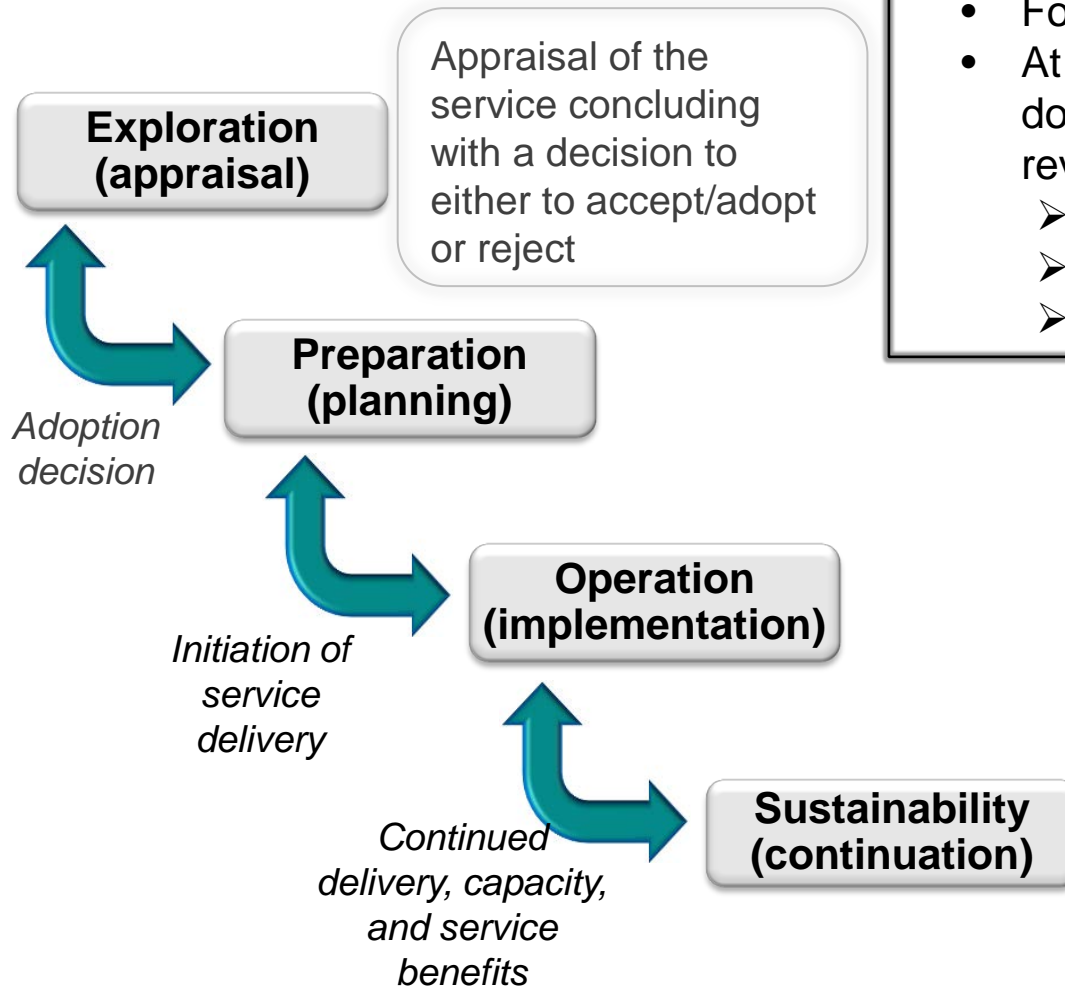


TIMEFRAME

Each part of the PBL cycle will be a 1.5-2 hours broken into the following:

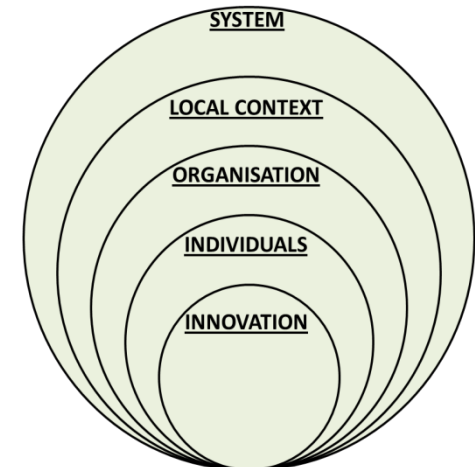
- Subject matter expert presentation (5-10 minutes)
- PBL case study group session (60 minutes)
- Group presentation and group discussion/summary (30 minutes)

WHERE TO BEGIN?

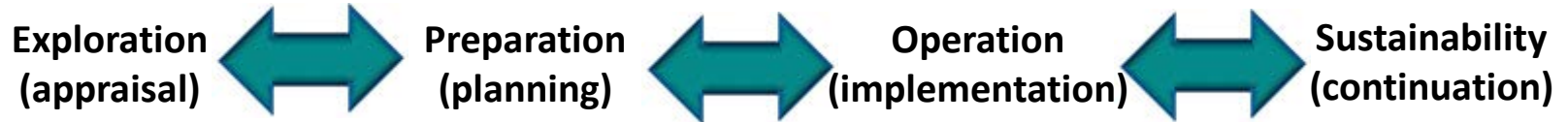


Key elements for successful implementation are:

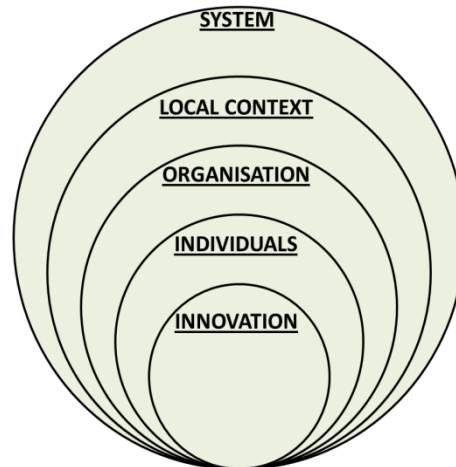
- Follow the implementation stages
- At each stage consider every domain/level of influence and review:
 - Specific factors
 - Precise strategies
 - Evaluations to measure success



STRATEGIC STEPS OF THE PROCESS



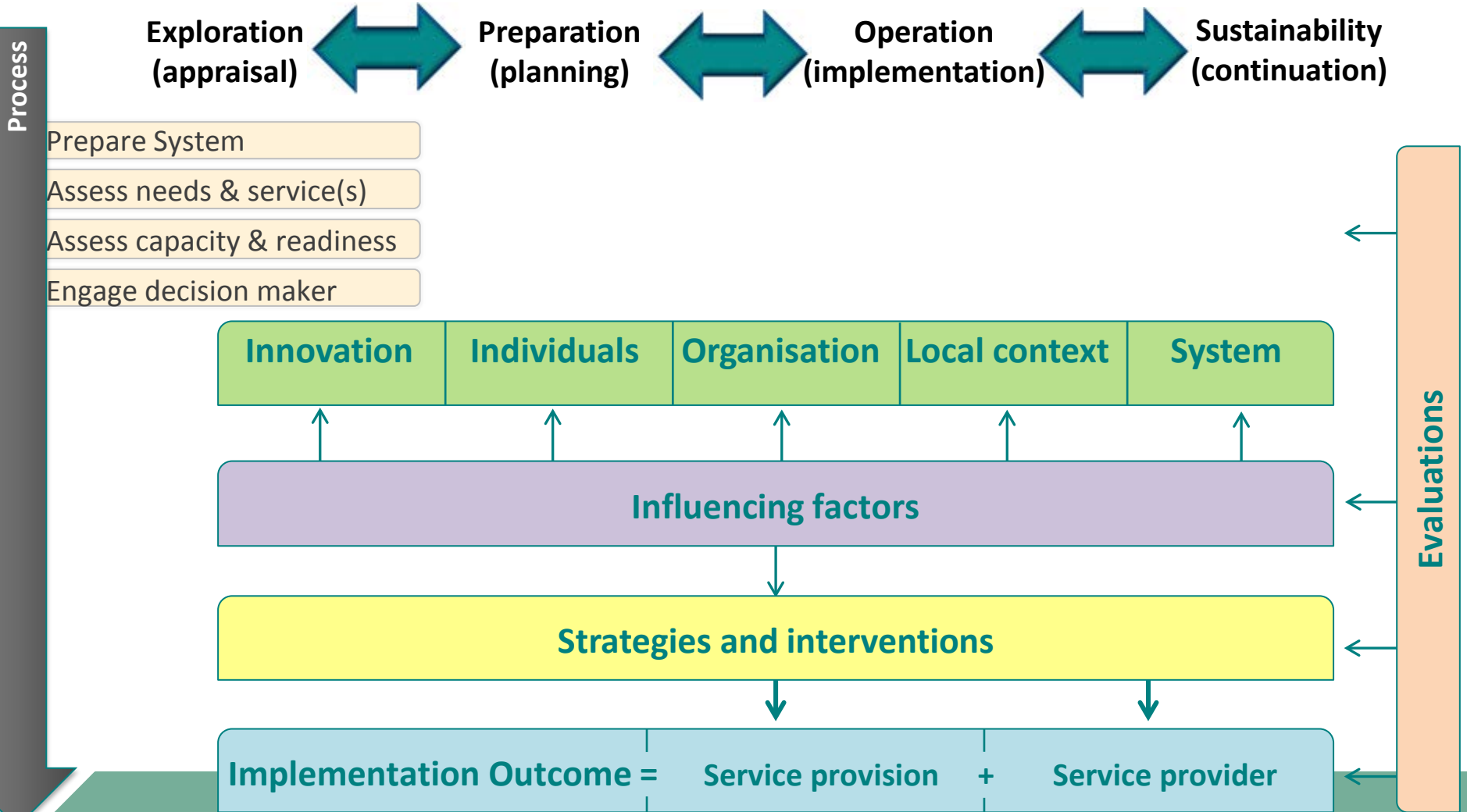
- 1 Prepare System
- 2 Assess needs & service(s)
- 3 Assess capacity & readiness
- 4 Engage decision maker



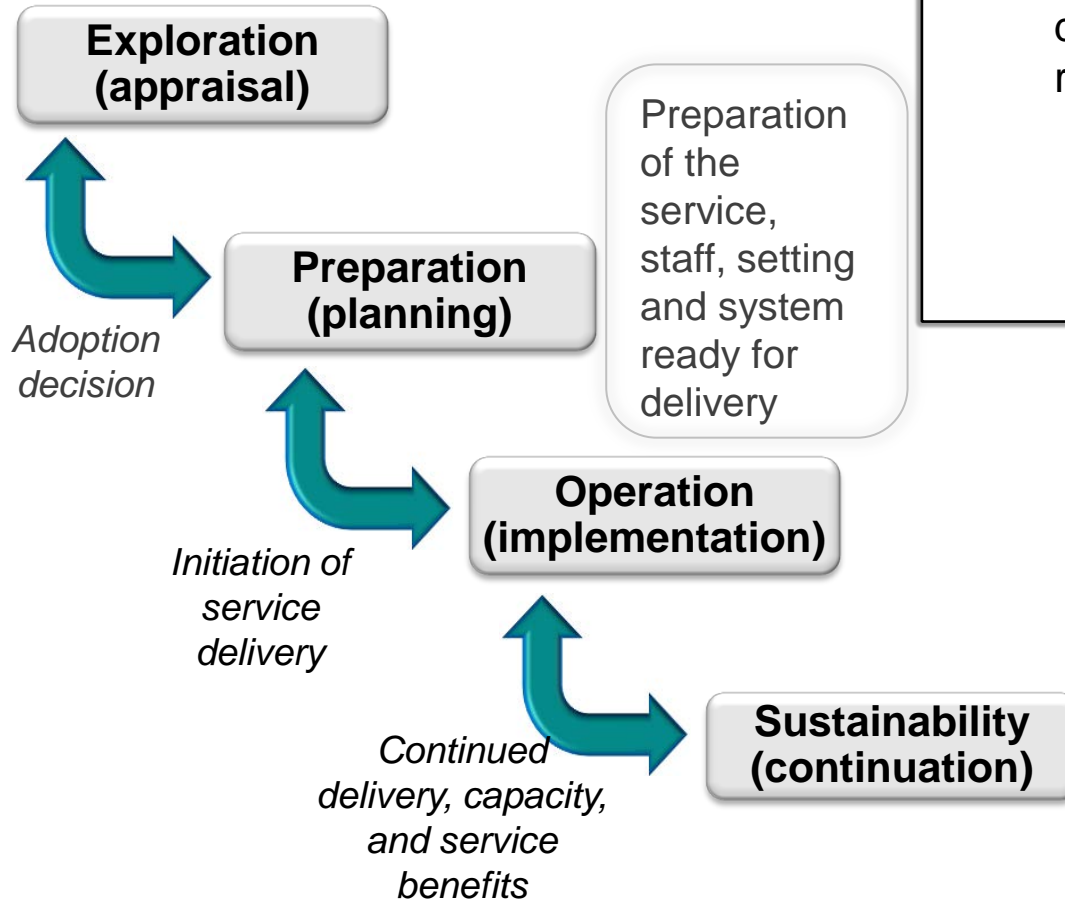
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STRATEGIC STEPS OF THE PROCESS

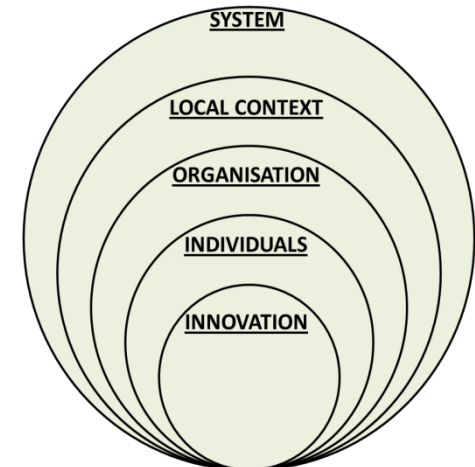


HOW TO PLAN?

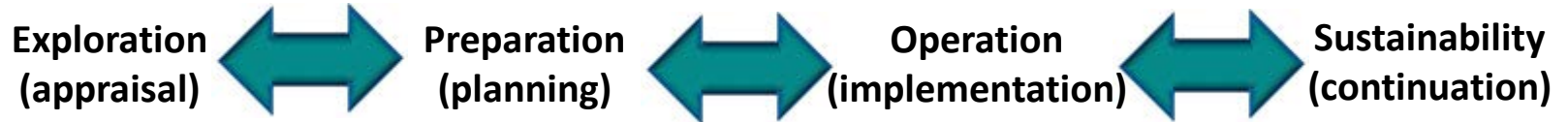


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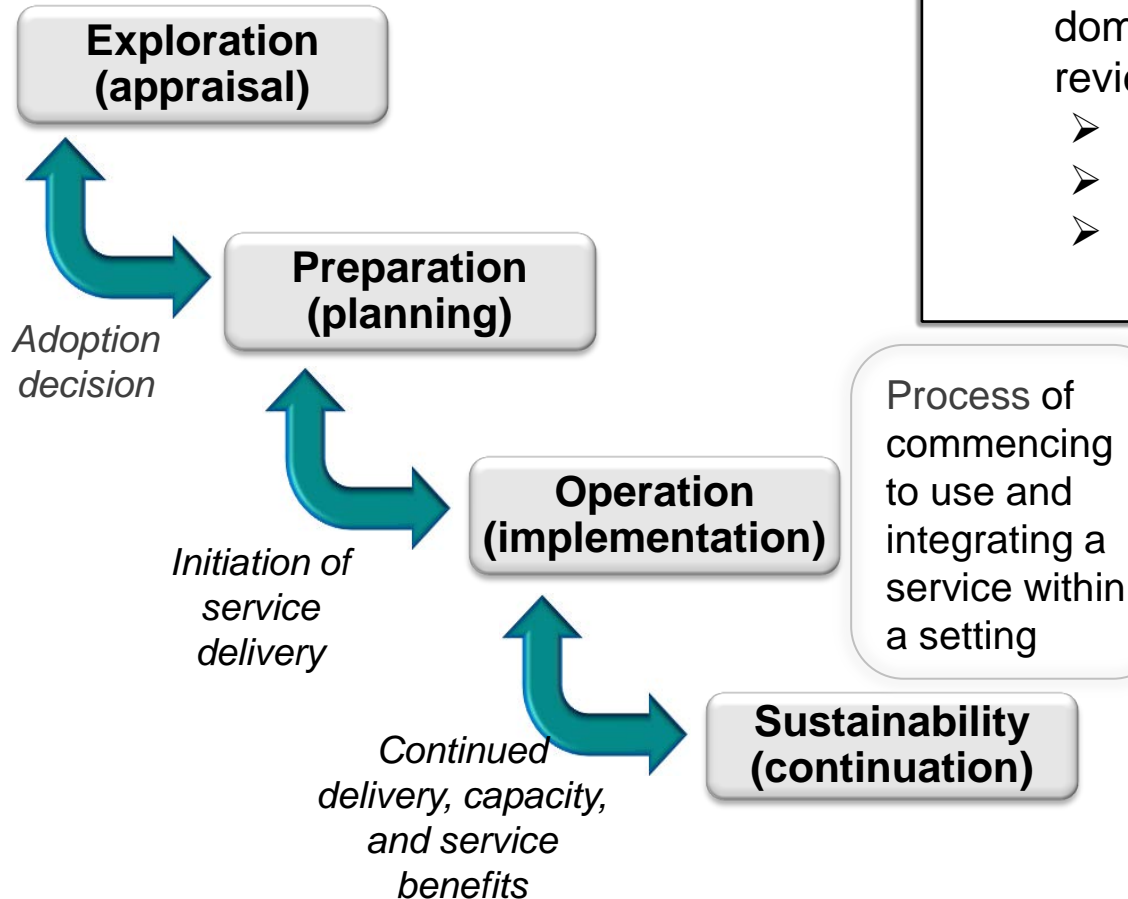
STRATEGIC STEPS OF THE PROCESS



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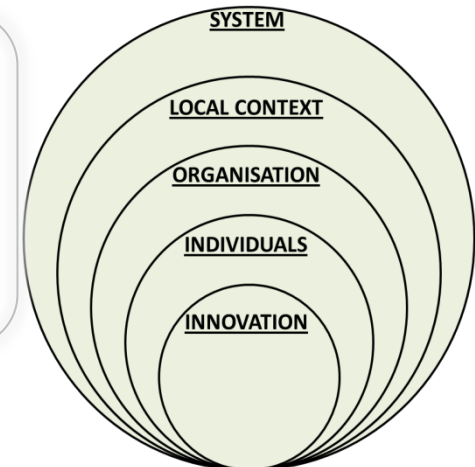
- 5 Develop implement. plan
- 6 Initial training
- 7 Create implementation team
- 8 Foster supportive climate, culture
- 9 Coaching/facilitation/technical assistance

WHEN TO START?

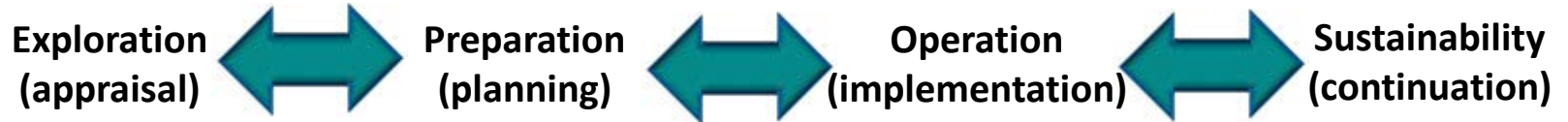


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STRATEGIC STEPS OF THE PROCESS

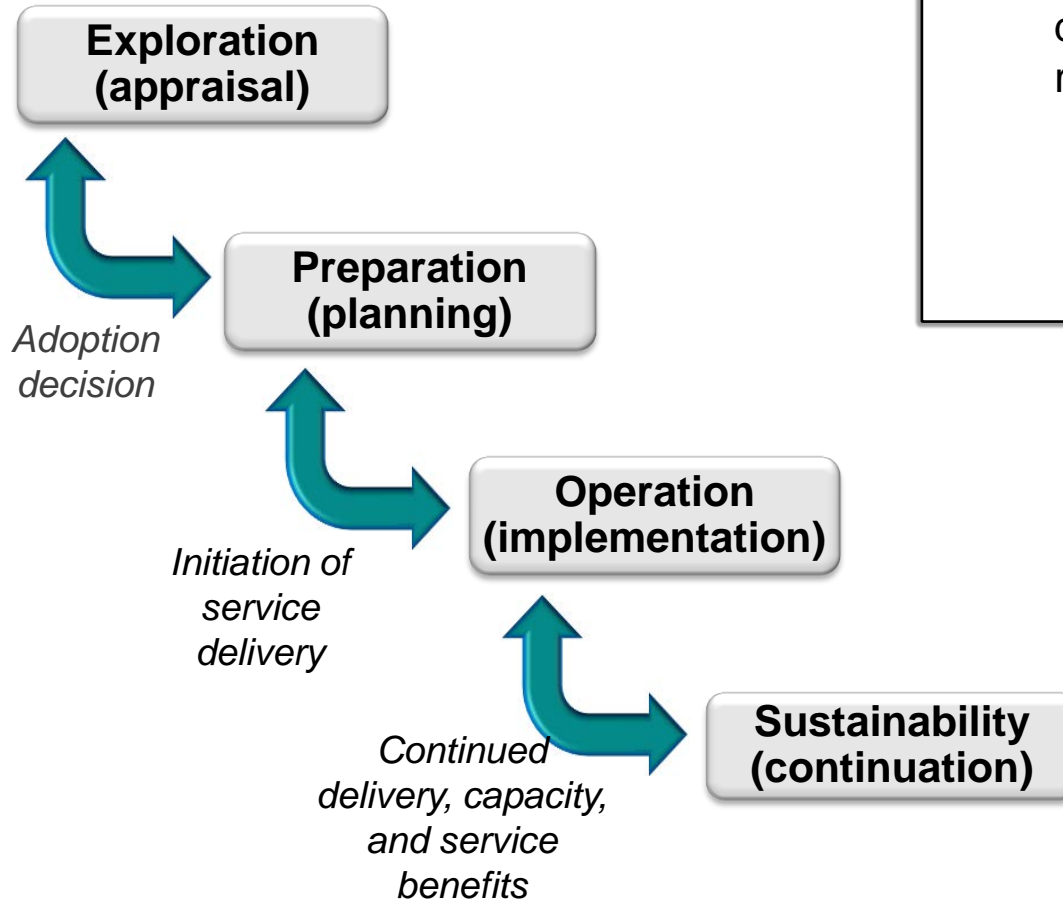


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- 2 Assess needs & service(s)
- 3 Assess capacity & readiness
- 4 Engage decision maker

- 5 Develop implement. plan
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- 7 Create implementation team
- 8 Foster supportive climate, culture
- 9 Coaching/facilitation/technical assistance

- 10 Implementation & process evaluation
- 11 Service outcome monitoring, audit & feedback
- 12 Innovation , adaptation & quality improvement

WHERE TO END...?

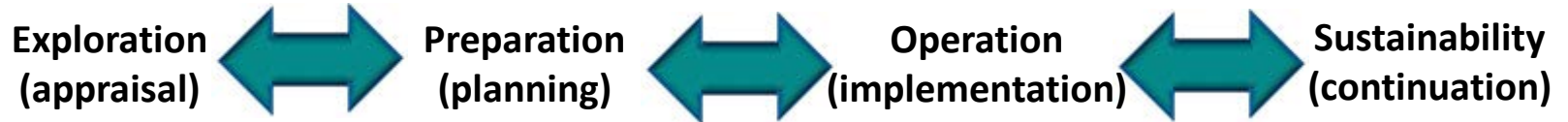


Key elements for successful implementation are:

- Follow the implementation stages
- At each stage consider every domain/level of influence and review:
 - Specific factors
 - Precise strategies
 - Evaluations to measure success

Integration and continuation of service delivery, maintenance of service setting, including system capacity & persistence of service outcomes

STRATEGIC STEPS OF THE PROCESS



- 1 Prepare System
- 2 Assess needs & service(s)
- 3 Assess capacity & readiness
- 4 Engage decision maker

- 5 Develop implement. plan
- 6 Initial training
- 7 Create implementation team
- 8 Foster supportive climate, culture
- 9 Coaching/facilitation/technical assistance

- 10 Implementation & process evaluation
- 11 Service outcome monitoring, audit & feedback
- 12 Innovation , adaptation & quality improvement

SUSTAINABILITY - FACTORS

- Strategic funding stability
 - Political Support
- Community awareness
 - Partnerships
- Organisational capacity
 - Resource management including HR
 - > Maintenance of knowledge and skills
 - Time management and role designation (behavioural regulation)
- Organisational culture
 - Support
 - Internal communication
 - Teamwork
- Organisational climate
 - Leadership
 - Staff buy-in (acceptability and understanding)
 - Staff participation (staff involvement, collaboration, commitment)
- Service flexibility/responsivity (continuous improvement and adaptation)
 - Strategic planning
- Evaluation maintenance (demonstrating program results)

SERVICE INTEGRATION SCALE (SIS)

- Questionnaire adapted from Slaghuis et al 2011
- Suitable for all pharmacy services
- Available in English and Spanish
- Spanish version currently being validated

Date: ___/___/___	Region of Pharmacy (state): _____	Pharmacy Code: _____	Sex: ___ (M/F)
Service Provider: ___ (Yes/No)	Employee Type: ___ (1-5)	Years of employment in this pharmacy: _____	Age: ___ (1-5)
	1. Owner		1. Under 20 years
	2. Manager		2. 20-34 years
	3. Employed pharmacist		3. 35-49 years
	4. Pharmacy technician		4. 50-65 years
	5. Pharmacy Assistant		5. Over 65 years

Service Integration Scale

We are very interested in your views regarding the integration of the service:

The Service Integration Scale (SIS) aims to measure the incorporation of the new service into routine practice and evaluate the support offered by a pharmacy for continued delivery of the service after implementation.

Please complete the questionnaire below by indicating your level of agreement by ticking the corresponding the box on a scale of 1 to 5 where 1 is "Not at all", and 5 is "Completely".

		Not at all				Completely	I don't know	Not applicable
		1	2	3	4	5		
1	The new service is regarded as standard work.							
2	The new service is easy to describe to other healthcare professionals.							
3	The new service is easy to describe to patients.							
4	All colleagues involved in the new service are knowledgeable about it.							
5	The service has changed the old routine once and for all.							
6	Performing the new routine always goes well.							
7	We are accustomed to the service.							
8	We automatically provide the new service as part of our routine work.							
9	We have adjusted our old habits to include the new							

SCALE-UP

Pharmacies if not all staff were involved initially ensure full pharmacy scale-up to maintain provision over time

Professional body if program was not adopted widely by pharmacies how to scale-up

Research team to consider how to demonstrate research impact and taking the program to scale.

DISCUSSION AND SUMMARY

OUR PURPOSE AND AIM

To learn, discuss and adapt implementation theory including the factors, strategies and evaluations necessary to guide successful implementation efforts, including from a practice, organizational, and research perspective.

What are the most important take home messages for you?

How will you use the output from this workshop when you get home?

What are the limitations of our output – what is missing for next year?