“Fit to stick”

Spreading effective interventions in healthcare

This PPT and other resources from
http://public.me.com/johnovr

or https://www.idrive.com - see references at end of PPT

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Outcomes – you are better able to

1)Describe what research shows about moving from a Phase 1 project or guidelines..

..to Phase 2 limited spread (P1//P2 chasm)

…and beyond

2) Describe the missing research and methods

…to help practitioners (at all levels)

….with research-informed guidance

- .

Outline

1 The problem

- Crossing the project/guideline-to-spread chasm

2 Research and guidance to help “chasm bridgers”

3 Research needed

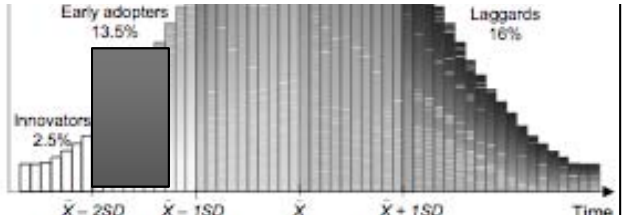
- Implementation science and spread to answer users questions

The problem: *we know more about what works than about how to enable ordinary services to use it*

- Proven effective treatments, practices & service delivery models
  - Slow and patchy uptake in services
  - Significant avoidable suffering and costs

we know this because there is knowledge about how to put these effective interventions into service

The uptake chasm



Research problems

- Knowledge about what works not known or used by practitioners
- Under-developed methods for finding and developing effective implementation and spread approaches.
- Not a research priority
- Attitude and rewards to research into implementation and spread

Examples P1

//P2 chasm

Type 1: First local test of

Automatic telephone assessment for depression in diabetes in one PHC

- Findings - Low cost good detection, allowed follow-up treatment, resulting in better adherence and less ultilisation
- Presented by team at network meeting with promise of support
- Rapid take-up in local PHCs but no spread beyond

Examples Ph1 //Ph2 chasm

Type 2 One-site trial

Trial evaluated

- Automatic telephone assessment for depression in diabetes in one PHC
- vs usual care in another PHC

- Findings – Same but with comparison group
  - more certainty
- Published
- No one took any notice
- After research funding finished, no budget or time for this system and follow-up

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Examples Ph1 //Ph2 chasm

Type 3 Many-site trial.

- 90 PCHs with 90 matched
- Automatic telephone assessment for depression in diabetes in 90 PHC

  ..vs usual care in 90 PHC

- Findings – additional study found discrepancies between telephone and expert panel assessment of depression
- But comparable reductions in ultilisation (why?)
- Again, published
- No one took any notice
- After research funding finished, no budget or time for system and follow-up

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These not real examples - characterisations of what might be expected

Poll –

This fits with my experience and understanding of the literature for all three “types”

1Yes,

2 No,

3 Partial fit

What explains?

Type 1 First local tes

Spread locally

Automatic telephone assessment for depression in diabetes in one PHC

But not beyond

Why not?

- Limited evidence,

But

- Enthusiasm and free support offered by team.
- Low cost offer by telephone service
- Charismatic trio of medical leader, nurse and social worker
- Sympathetic local leaders

What explains'

Type 2 One site trial

Same findings, but trial

- Stronger evidence
- Practitioners do not read scientific IT journals
- No “push” by pioneers or others.
- No infrastructure for spread

What explains?

Type 3 Many site trial.

- Same but in many PCHs

- Questions about sensitivity and specificity of telephone assessment
- No practitoners read about it
- No push, no funding.

What explains?

Summary

– Why the spread chasm?

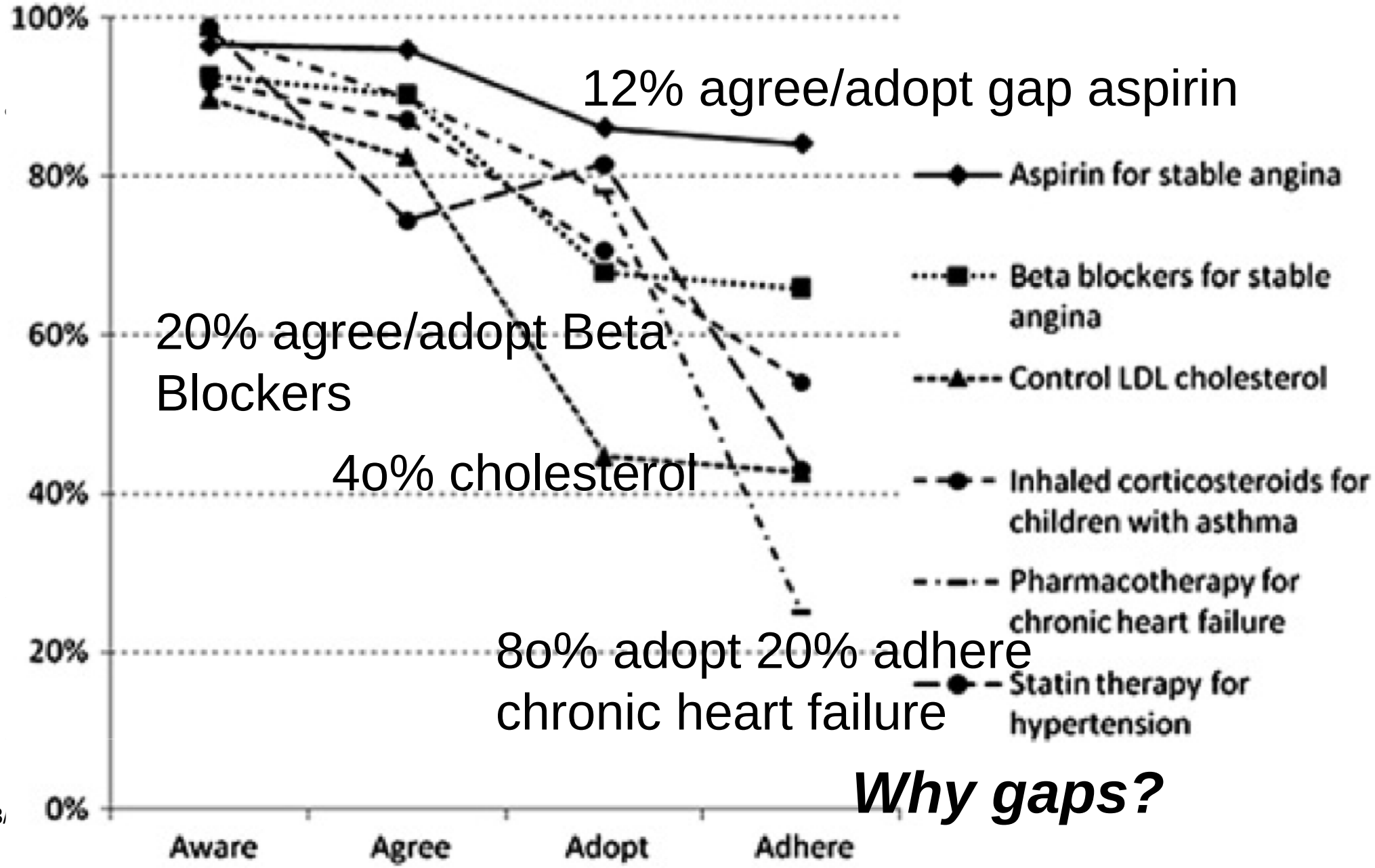
- Why do you expect auto-spread for all proven or promising?
- Questions about sensitivity and specificity of telephone assessment?
- But no practitioners read about it anyway

- Doubts about “would it work in our setting”?
- No infrastructure / support
- No push,
- The chasm between systems and services
  - Might spread in one system with infrastructure and push
  - No cross system infrastructure
- No funding

Real example of chasm from Guideline to Widspread use

- 1. Awareness of guideline
- 2. Agreement with guideline
- 3. Adoption
  - decide to follow guidelines for some patients
- 4. Adherence
  - Follow guidelines at appropriate times for all patients
- *Would concepts apply to patient's treatment adherence*?

From guidelines to patient benefit: “leakage”



Why gaps?

John's observations: from reviews and experience

- Some things spread rapidly
  - Clinician interest/patient demand (minimally invasiev surgery)
  - Compelling cost savings (automated testing path)
- Some slowly, in patches
  - Support to prevent admission of high users
- Some proven but very low uptake
  - Do not spread straight from the "research fridge"
- Some in spite of –ve evidence
  - Smart IV pumps in ICU (Nuckols et al 2007)

Which Ones?

Why?

Research based theory – simple summary

Seed

Gardener/planting & nurture

Climate / soil

Bridging implementers

Their actions and plan

1 Support infrastructure

2 Local organisational features supportive

3 Wider environment

Product Push> <Pull

Bridging the P1 / / P2 chasm

- Product
  - Features of the new better intervention
  - Comes with credible evidence of effectiveness
- Push
  - Individual implementers and plan
- Pull
  - Service experience a problem this can solve
  - It fits with values and “makes sense”
  - Services are capable of adopting and sustaining it –resources
  - Environment not hostile, may be helpful
- Other factors for P2 to P3 60% services?

All bridges are local – but need support and nurturing environment – the 10-20-30-40 principle

- 10% of success is local personalities
- 20% of success is using a change proven elsewhere to improve quality and reduce costs
  - – credible & experience advice
- 30% is your implementation (do you have skills, project team capacity, experience?)
- BUT 40% is nothing to do with you -

  whether your context enables implementation and rewards value improvements

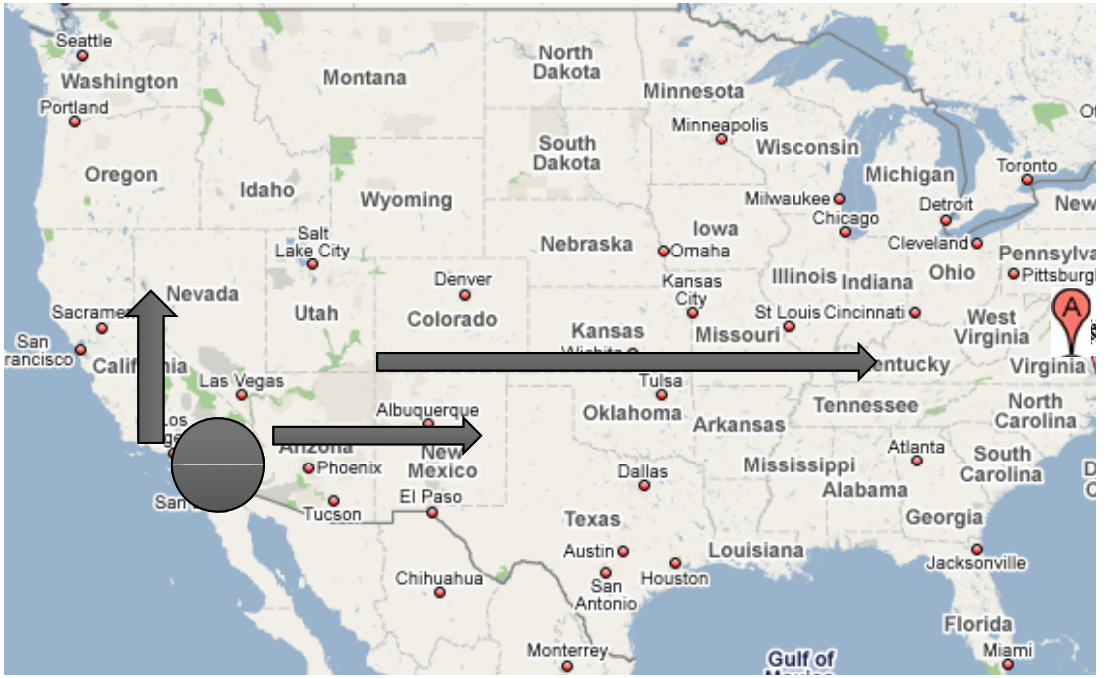
Second Bridge? The P2 / / P3 chasm

- From a number of services (P2) to 70% regional or national coverage with >50% adoption of intervention (P3)
- Which is most critical here? Vote for one of these

1)Product Yes/No?

2)Push Yes/No?

3)Pull Yes/No?



Part 2: What help can research give to “Chasm-Bridgers”?

Role model “Evel-Knieval researcher-entrepreneurs” “don’t take no”

From pilot, across the chasm

….to widespread adoption

- Eric Coleman (Transitions)
- Peter Pronovost (CLABSI)
- Lisa Rubenstein (Depression care in PHC)
- Steve Asch (Chronic Heart Failure , HIV AIDS)

Leaders important but not the only ingredient

Should not depend only on unusual leaders

Part 2: What help can research give to other "Chasm-Bridgers"?

1 Research based assessment tool – HRET

2 Concepts - Ways of thinking about what and how to spread

3 Categorisation of implementation/spread approaches

4 Implementation science

1 Research based assessment tool – HRET

Select the number that best reflects the perception of the average health care leader about the innovation you are seeking to spread.

Environmental Factors:

						Item Score
1.	**The innovation will:**					
	Make/save lots of money	**Make/save some money**	**Have no financial impact**	**Cost/lose some money**	**Cost/lose lots of money**	
	5	**4**	**3**	**2**	**1**	_____
2.	**The innovation will:**					
	Greatly reduce legal risks	**Slightly reduce legal risks**	**No effect on legal risks**	**Slightly raise legal risks**	**Greatly raise legal risks**	
	5	**4**	**3**	**2**	**1**	_____
3.	**The innovation will:**					
	Help meet current regulation	**Prepare for future regulation**	**Is unrelated to any known regulation**	**May have regulatory risks**	**Will cause regulatory risks**	
	5	**4**	**3**	**2**	**1**	_____

Sections HRET Spread Assessment Tool

- Innovation Factors
- Target Audience Factors
- Organizational Factors
- Environmental Factors

Spread Readiness Scale:

- *101-125 Organic, Natural Spread*
- *76-100 Promising Spread Initiative*
- *51 – 75 Challenging Spread Initiative*
- *<50 Doomed, Focus on Underlying Issues*

Research into implementation “approaches” *Progress so far*…Conceptualisation

Are there different “approaches” and how do we define/describe?

Concepts 1: distinction between

a) Treatment and service delivery interventions

from (Product or content)

b) Implementation - what done to enable providers to change

- Note: distinction not useful when implementation involves iterative adaption - testing & revision of intervention (intervention not already proven locally)

Example of intervention “product” or “content”

Eg CLABSI Bundle:

1 Wash your hands.

2 Clean skin with chlorhexidine.

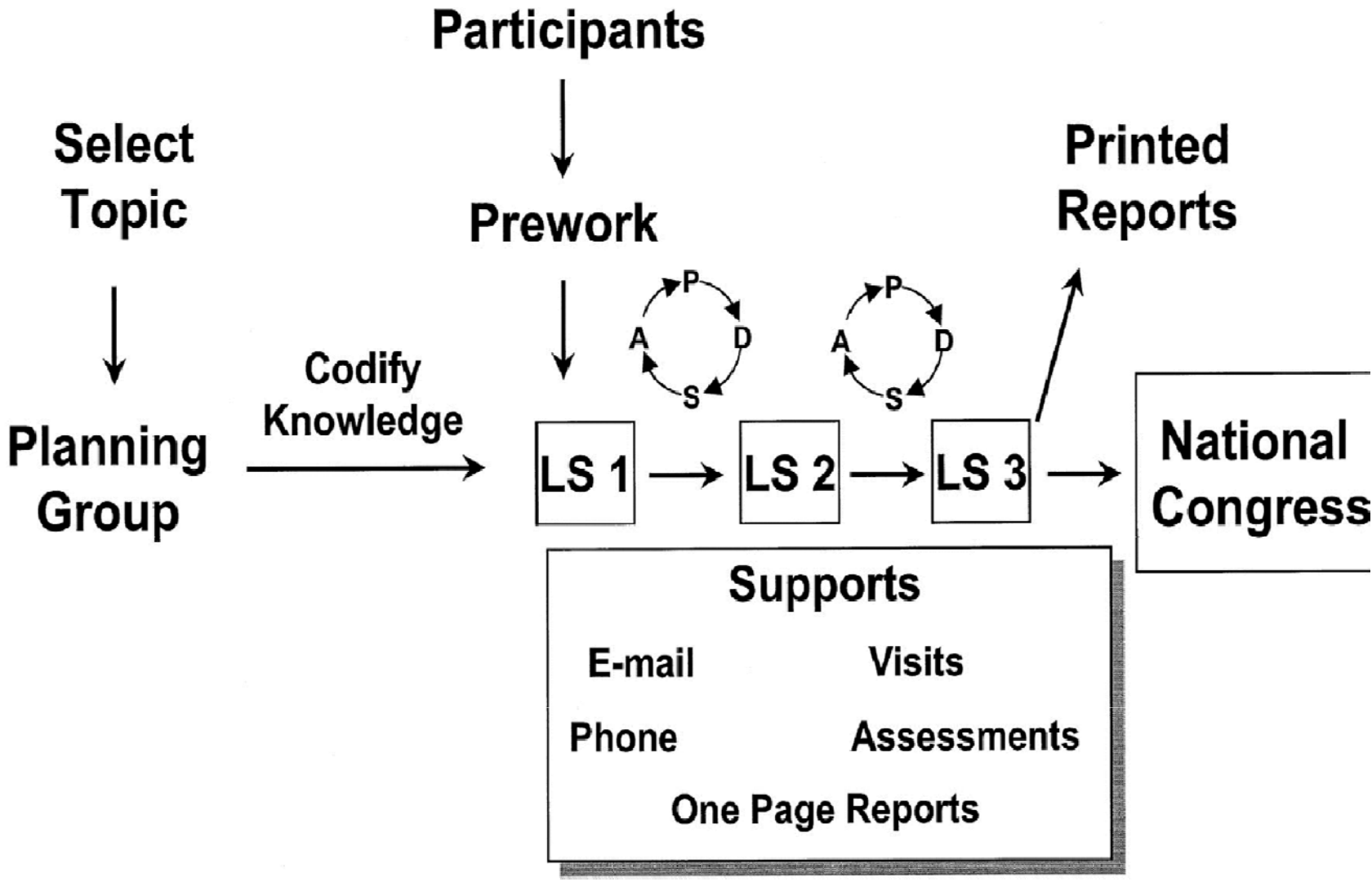
3. Use maximal barrier precautions.

4. Avoid the femoral site.

5. Ask daily whether the benefits of the line exceed the risks.

Example of one "Implementation Approach"

Breakthrough collaborative method eg Michigan Keystone:



Four elements necessary for intentional spread
Illustrated on a Collaborative breakthrough programme

- Finance – to pay for the below. Pay for collab. Organisers, project team time etc.
- Structure:
  - Groups and accountability 3 levels: 1regional collaborative organisers, 2 local management, 3 local project team
- Systems:
  - Project team measurement and feedback
  - Regional support
- Steps/methods
  - Planning, learning sessions & calls, post-collaborative
  - To plan and change local service, test and revise

Implementation approach = The “FSSS” combination of:

1 Finance – sources (1 to start and, 2 re-finance to sustain from savings or ops budget)

2 Structure:

- who is going to help this happen, and by when: roles, responsibility, time, accountability

3 Systems:

- measurement and feedback

4 Systematic Steps:

- methods, actions = systematic ways to enable change

Is this conception of "intervention approach"- (Finance, Structure, Systems, Steps/methods) a theory then?

What do you think - YES? No?

Yes – based on observation of collaborative and other intentional systematic improvement programmes

Predictive theory – untested

H1: Some implementation approaches are more suited to some interventions than others

H1: Match intervention to implementation approach

eg if aim to change individual physician prescribing behaviour, then this implementation approach may be more effective than a collaborative:

- Finance: operations investment and support
- Structure: nationally credible researchers, local physician opinion leaders and champions, peer project teams, academic detailers.
- Systems: credible existing data banks on prescribing, & capable of relating to units or physicians for feedback or payment
- Systematic steps: training, feedback, academic detailing.

Different approach if implementing a clinical decision support system within an EMR:

- Finance: operations investment and support
- Structure: project team, user steering committee, senior management sub-group
- Systems: Project management, EMR capable of adding CDS, updating content of CDS
- Systematic steps: Methods: phased testing, flexibility in standard screens, etc

If implementing a chronic care model or falls prevention then….

H2 : Context match to both intervention and implementation approach

- Is there a “fit”, and is it “fit to stick”?
- Internal context:

  Advances values, norms, objectives, & priorities
- External context:
  - Compatible with regulations, financing and directives

Conclusions

1 “Not fit to implement, because innovation not proven”

- John argued for testing through spreading, once proof of concept

2 For it to be implemented *and* sustained it has to fit the context

- intervention will be rejected by local and external environment, unless these changed.

The GIP guide: “Goldilocks Implementation Principle” improvement has to be different, but not too-different to be implemented,

- unless major push, and changes to pull

Part 3 Research Agenda and Methods - Implementation science

Covers 4 subjects:

1. Why implementation research is important
2. Practitioners have questions we are not addressing
3. Methods for providing research based answers
4. What are the challenges for us

Why implementation infrastructure needed

Do current channels work? – professions limited impact, regulation more, financial penalties and rewards - more still.

Concepts 3:

- Specific intervention implementation infrastructure (eg time limited collaborative for X)
- Generic implementation infrastructure : to support any project and continual change
- (eg IMC research unit, KP performance improvement units, VA systems design and some QUERI centres)

Knowledge Translation to everyday clinical practice

K Basic BioMedical Science → K Efficacy *In controlled situation with specific patients* → K Treatment Effectiveness range of patients → K Implementation Effectiveness range of providers to use treatment

Translation 1
Intervention to patients
RCTs on patients

Translation 2
Intervention to range of patients in different settings
RCTs or controlled trials on patients

Translation 3
Intervention to providers to use the treatment
RCTs or controlled trials on providers
Non-experimental research designs

Where is most research focused?

Would more research on T3 pay back?

“Implementation” defined broadly

Steps in implementation pathway: intermediate outcomes	% patients impacted, who may benefit
50% of services decide to adopt	50%
50% of clinicians in this service prescribe appropriately (accept, adopt)	25%
50% patients collect prescription and start	12.5%
50% adhere correctly	6.2%
50% actually benefit	3.2%
After 6 months adhere and benefit	1.6%

After 2 years?

Likely impact on stroke and heart attack?

(Based on Glasgow 2010)

Why implementation research is important

If you were a social venture capitalist with 100m$: would you put it in better drug treatment research

…or implementation research?

- Knowledge about effective interventions to clinicians, patients and organisations

  …could help others implement proven better practices or delivery models

- The potential of implementation research, already showing in some projects

What are the questions this research needs to answer…..

Descision-makers/implementers questions:

- How certain does the evidence of effectiveness need to be before spread? (internal validity). Too early/late?
- Local applicability (external validity) patients/providers
  - What do we have to do to copy this? (research description)
- Time and money costs, and savings?
- Can research help spread proven interventions?
- Test interventions locally?

= Build scientific knowledge of implementation and spread not just efficacy

Practitioners want this information:

- Description: What was the implementation approach?

  (and the intervention content)

- Cost effectiveness: Did it achieve the change cost-effectively?

  (and did the intervention change then reduce costs and make a difference for patients?)

- Replicability: in which situations would we expect similar results?

….and which principles should guide design of the implementation approach in other situations?

Three research strategies

1 Parallel process and outcome-effectiveness evaluations

2 Theory-based testing or model-revising

3 Integrated research-implementation evaluation

See March 8th Cyber seminar

One research agenda

1 Describe different successful and unsuccessful spreads

- using the spread approach framework: finance, structure, systems and steps/actions
- Is there a local to national spread chasm P2 > P3 also?

2 Test hypothesis different categories of interventions need different spread strategies to be successful

Possible categories

- Provider behaviour change (care practice) (simple or complex)
- Service delivery model
- ICT intervention in a service
- Method intervention

Summary

"Performance gap can be narrowed by implementing knowledge about effective treatments and care models"

- Uncertainties: cost-effectiveness and reproducibility
- Constrained by lack of research informed guidance about effective implementation.
- Cost of operating new model is one thing – cost of implementation is another – when is payback and for whom?
- Research on implementation and spread, if informed by theory, can give guidance for decision-makers
- Use theory suited to intervention and research users questions
-

Research Challenges

Attitude – practical questions not real science and won't get published – can't serve two masters

Academic promotion and reviewers

Skills to use the methods

New research practice

- Practice based – engaged partnership research

Financing

Shift of financing and reviewers to be more accepting

Do we have the skills and will to innovate?

“approaches”

& issues in “transfer” to other setting (external validity)

Why

- Actionable research, wanted by decision makers, could significantly reduce patient suffering and costs
- Final frontier of the “translation pipeline”, least understood, and where non-experimental methods often a better match to questions.
- Exciting rapidly developing field with innovation in research methods – join the pioneers on the frontier!

Resources on Johns web site folder

- **http://public.me.com/johnovr**
- **Or**

Download files from idrive by going to web site: http://www.idrive.com/;

- Log in user = jovr pass= anna. THEN use the search field on the right to enter in a word realated to the subject. You will see files on this subject – click on the file you want to download, after entering anna and it will download to your computer.

Conclusions

1. Main points…
2. This was new or surprising, for me…
3. The most useful idea for my work was…
4. What I would like to find out more about…

Recommended spread research references (see "presenters notes" view on PPT below)

Richard Della Penna1, Helene Martel2, Esther B Neuwirth*2, Jennifer Rice3, Marta I Filipski2, Jennifer Green4 and Jim Bellows2 **Rapid spread of complex change: a case study in inpatient palliative care** *BMC Health Services Research* 2009, **9:245**

Greenhalgh, T Robert, G Bate P Kyriakidou O Macfarlane F How to Spread Good Ideas: A systematic review of the literature on diffusion, dissemination and sustainability of innovations in health service delivery and organisation. London: UK National Co-ordinating Centre for NHS Service Delivery and Organisation, 2004.

Nolan K, Schall MW, Erb F, Nolan T. Using a framework for spread: The case of patient access in the Veterans Health Administration. Jt Comm J Qual Patient Saf. 2005 Jun;31(6):339-47.

Recommended spread references – Practical research-based guidance

- **Supporting Spread:** Lessons from the California Improvement Network 2011 www.chcf.org.

Supporting Spread: Lessons from the California Improvement Network 2011 www.chcf.org.

McCannon C.J., Schall M.W., Perla R.J.: *Planning for Scale: A Guide for Designing Large-Scale Improvement Initiatives.* IHI Innovation Series white paper. Cambridge, MA: Institute for Healthcare Improvement, 2008. http://www.ihi.org/IHI/Results/WhitePapers/PlanningforScaleWhitePaper.htm (last accessed Mar. 26, 2009).

Massoud M.R., et al.: *A Framework for Spread: From Local Improvements to System-Wide Change.* IHI Innovation Series white paper. Institute for Healthcare Improvement; 2006. http://www.ihi.org/IHI/Results/ WhitePapers/ AFrameworkforSpreadWhitePaper.htm (last accessed Mar 26, 2009).

Pryor D.B., et al.: The clinical transformation of Ascension Health: Eliminating all preventable injuries and deaths. *Jt Comm J Qual Patient Saf* 32:299–308, Jun. 2006.

Brach C, Lenfestey N, Roussel A, Amoozegar J, Sorensen A. *Will It Work Here? A Decisionmaker''s Guide to Adopting Innovations*. Prepared by RTI International under Contract No. 233-02-0090. Agency for Healthcare Research and Quality (AHRQ) Publication No. 08-0051. Rockville, MD: AHRQ; September 2008.

DETAILS

Different ways of classifying the 3) Systematic Step methods?

- Professional; Financial strategies; Organizational strategies. Or guidelines (Hysong 2011)

Clinic configuration: Changes to the membership of a clinic (e.g., moving toward a configuration of one doctor, one nurse, and one clerk for each clinic team)

Clinical reminders: Computerized (primarily) or physical (occasionally) reminders instructing the provider that some clinical action is due for a particular patient

Clinical reminders (under development): Facilities have not finished developing a full set of clinical reminders for use with CPRS

Computerized template: Standardized computer screens for entry of specific patient information, such as depression screening, standardized text entries for progress notes

CPGs committee: Presence of a committee whose sole purpose is to review, evaluate, and discuss guideline-related issues

Customizing clinical reminders: Customizing the human–computer interface reminders to make them more user-friendly

Data warehouse: Integration of electronic medical records across multiple facilities in a region

Electronic communication: Telecons, videoconferencing, synchronous (e.g., IM) and asynchronous (e.g., e-mail) telecommunications methods

Electronic medical record (fully implemented): The facility reports that their electronic medical record is fully operational and running

Electronic record exchange across facilities: Software package that allows the electronic transfer of records or orders from one system to another

EPRP as monitoring/feedback tool: Using data from EPRP reports as a form of feedback on guideline adherence for the providers

Executive boards handle guideline issues: Existing committees (not dedicated to guidelines) like the medical executive board, clinical executive board, professional standards board discuss performance improvement efforts related to guidelines

External performance benchmarking: Comparing internal performance to some external reference

Identifying a champion: Identify someone knowledgeable and supportive of clinical practice guidelines to serve as a credible source to change attitudes and beliefs about guidelines

Physician specific EPRP reports: Each individual physician gets a report based on EPRP data on their individual performance, when available

Staff/team meetings: Using regular staff or team meetings to disseminate guideline information

Concepts : Alignment of context influences

- Infrastructure may involve “influencers” which act from and on different levels of health system
- to get the influences at each level to align

Eg for CLABSI or readmission

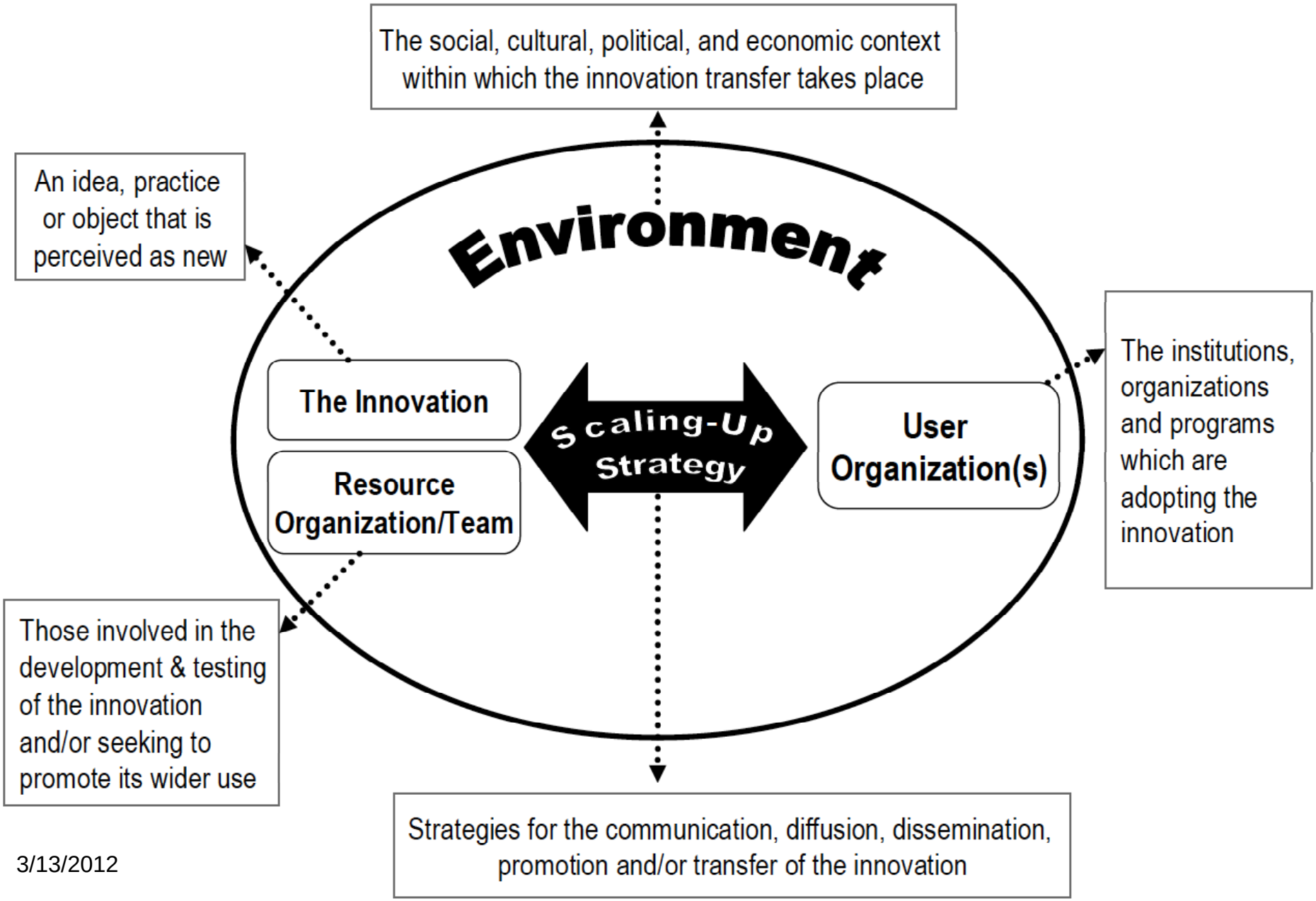
- Need “alignment adjusters” to identify influences countering X change and to “sheep dog” the influences
- Theory: aligned actions by different levels may be more effective (but feasible?) (context to help implementation)

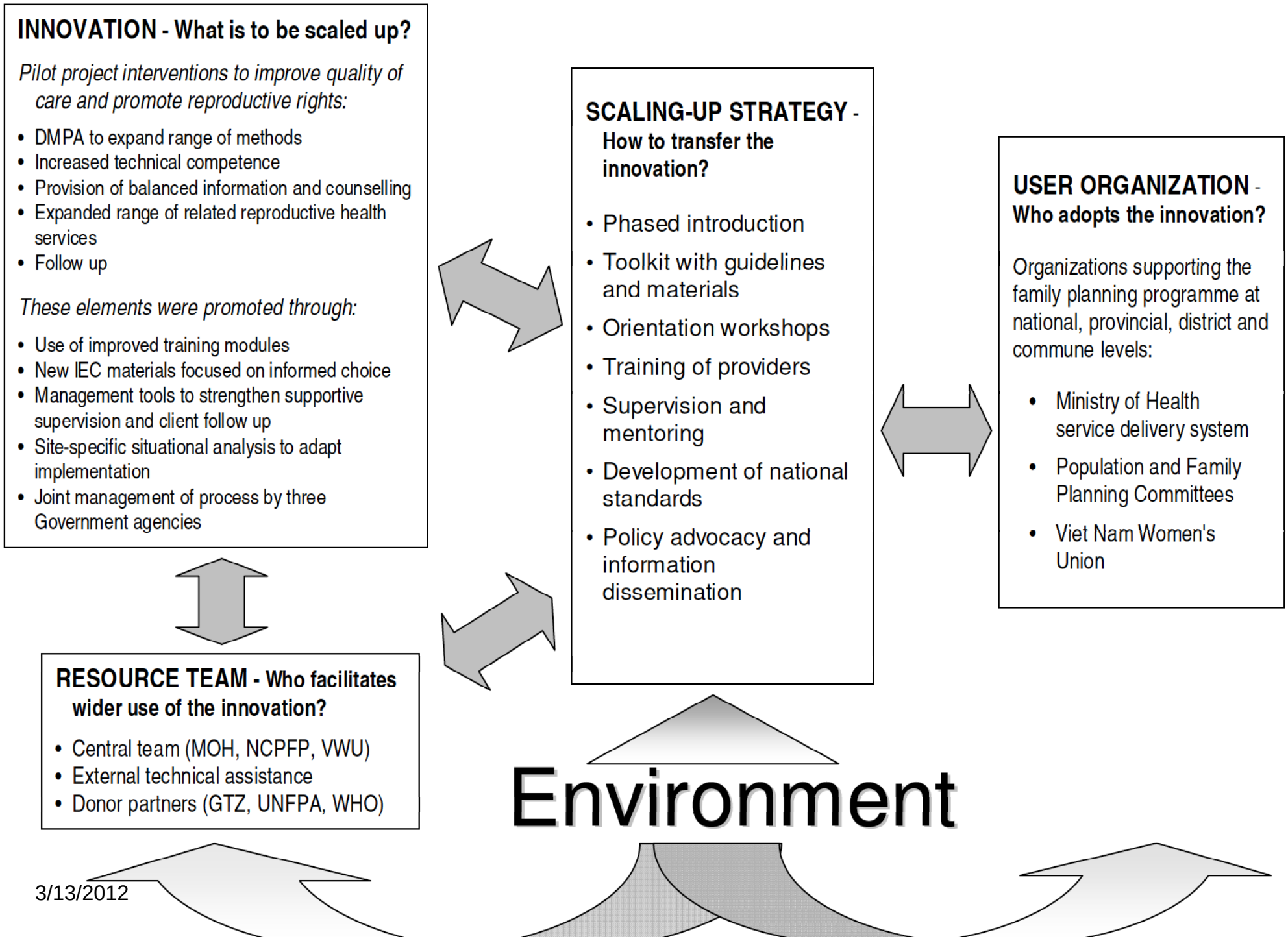
Question: You are a social venture capital fund You have $100m for cardiovascular research:

Will it do more good for patients if used to develop more effective implementation of known effective cardiovascular treatments,

…or to develop more effective treatments?

- New treatments? Yes?
- Effective implementation? (including patient adherence!) Yes
- If providers use known effective CV treatments 10% more, will this do more good than 10% more effective CV drug therapy? No? Yes?


The social, cultural, political, and economic context within which the innovation transfer takes place
An idea, practice or object that is perceived as new
Environment
The Innovation
Resource Organization/Team
Scaling-Up Strategy
User Organization(s)
The institutions, organizations and programs which are adopting the innovation
Those involved in the development & testing of the innovation and/or seeking to promote its wider use
Strategies for the communication, diffusion, dissemination, promotion and/or transfer of the innovation


INNOVATION - What is to be scaled up?
Pilot project interventions to improve quality of care and promote reproductive rights:
• DMPA to expand range of methods
• Increased technical competence
• Provision of balanced information and counselling
• Expanded range of related reproductive health services
• Follow up
These elements were promoted through:
• Use of improved training modules
• New IEC materials focused on informed choice
• Management tools to strengthen supportive supervision and client follow up
• Site-specific situational analysis to adapt implementation
• Joint management of process by three Government agencies
SCALING-UP STRATEGY - How to transfer the innovation?
• Phased introduction
• Toolkit with guidelines and materials
• Orientation workshops
• Training of providers
• Supervision and mentoring
• Development of national standards
• Policy advocacy and information dissemination
USER ORGANIZATION - Who adopts the innovation?
Organizations supporting the family planning programme at national, provincial, district and commune levels:
• Ministry of Health service delivery system
• Population and Family Planning Committees
• Viet Nam Women's Union
RESOURCE TEAM - Who facilitates wider use of the innovation?
• Central team (MOH, NCPFP, VWU)
• External technical assistance
• Donor partners (GTZ, UNFPA, WHO)
Environment

Professional interventions

a) Distribution of educational materials
b) Educational meetings
c) Local consensus processes
d) Educational outreach visits
e) Local opinion leaders
f) Patient-mediated interventions
g) Audit and feedback
h) Reminders
i) Marketing
j) Mass media.

Financial interventions

Provider interventions

a) Fee-for-service
b) Prepaid
c) Capitation
d) Provider salaried service
e) Prospective payment
f) Provider incentives
g) Institution incentives
h) Provider grant/allowance
i) Institution grant/allowance
j) Provider penalty
k) Institution penalty
l) Formulary.

Patient interventions

a) Premium
b) Co-payment
c) User fee
d) Patient incentives
e) Patient grant/allowance
f) Patient penalty.

Organisational interventions

Provider-orientated interventions

a) Revision of professional roles
b) Clinical multidisciplinary teams
c) Formal integration of services
d) Skill mix changes
e) Continuity of care
f) Arrangements for follow-up
g) Case management
h) Satisfaction of providers with the conditions of work and the material and psychic rewards
i) Communication and case discussion between distant health professionals.

Patient-orientated interventions

a) Mail order pharmacies
b) Presence and functioning of adequate mechanisms for dealing with patients' suggestions and complaints
c) Consumer participation in governance of healthcare organisation.

Structural interventions

a) Changes to the setting/site of service delivery
b) Changes in physical structure, facilities and equipment
c) Changes in medical records systems
d) Changes in scope and nature of benefits and services
e) Presence and organisation of quality monitoring mechanisms
f) Ownership, accreditation, and affiliation status of hospitals and other facilities
g) Staff organisation.

Regulatory interventions

A regulatory intervention is any intervention that aims to change health services delivery or costs by regulation or law. These interventions may overlap with organisational and financial interventions.

a) Changes in medical liability
b) Management of patient complaints
c) Peer review
d) Licensure.

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- Research methods technology developed the hammer
- Does not work on screws
- Can you invent a screwdriver to meet needs?
- Will doing so pay off?
- Not now, but soon will

Is your intervention a CSI?

Multiple actions

- By different actors
- At different times

In a changing environment/context

- With impacts which act back on the actions

Actors interpret the intervention concept

Actors influence to change actions by feedback and others experience

Implementation affected by power groups & how they interpret the intervention or actions