

Using system science to better understand scale-up

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BYU



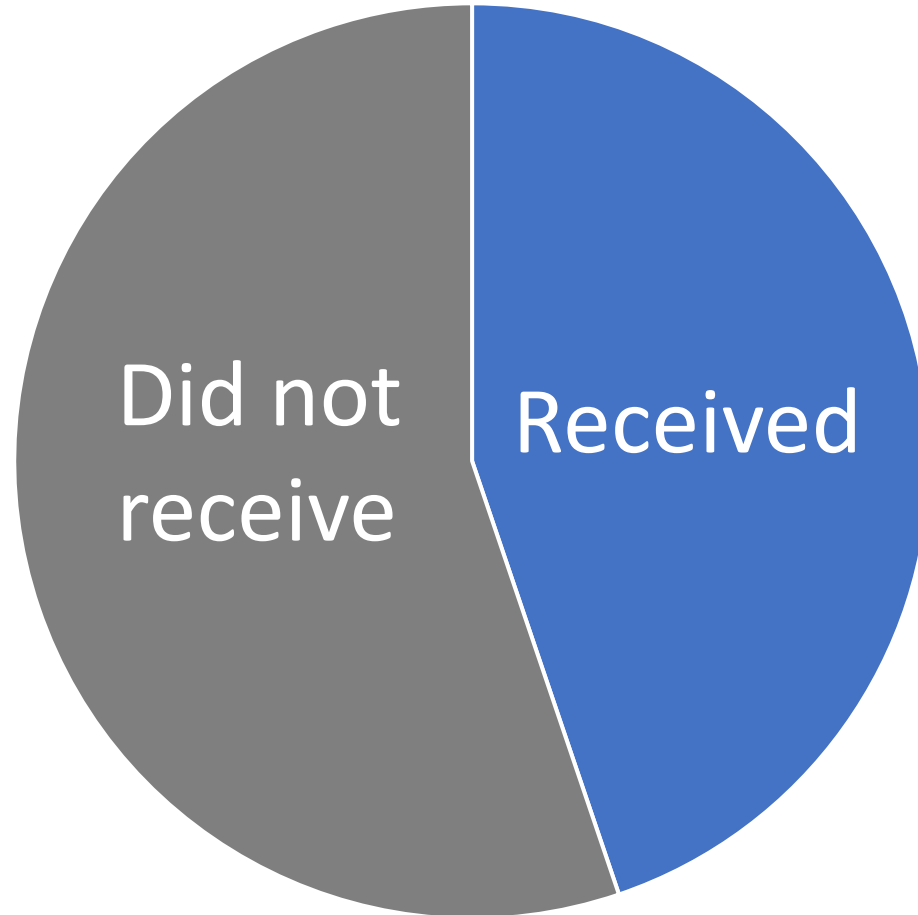
Katherine Marcal, PhD, MSW

UNLV

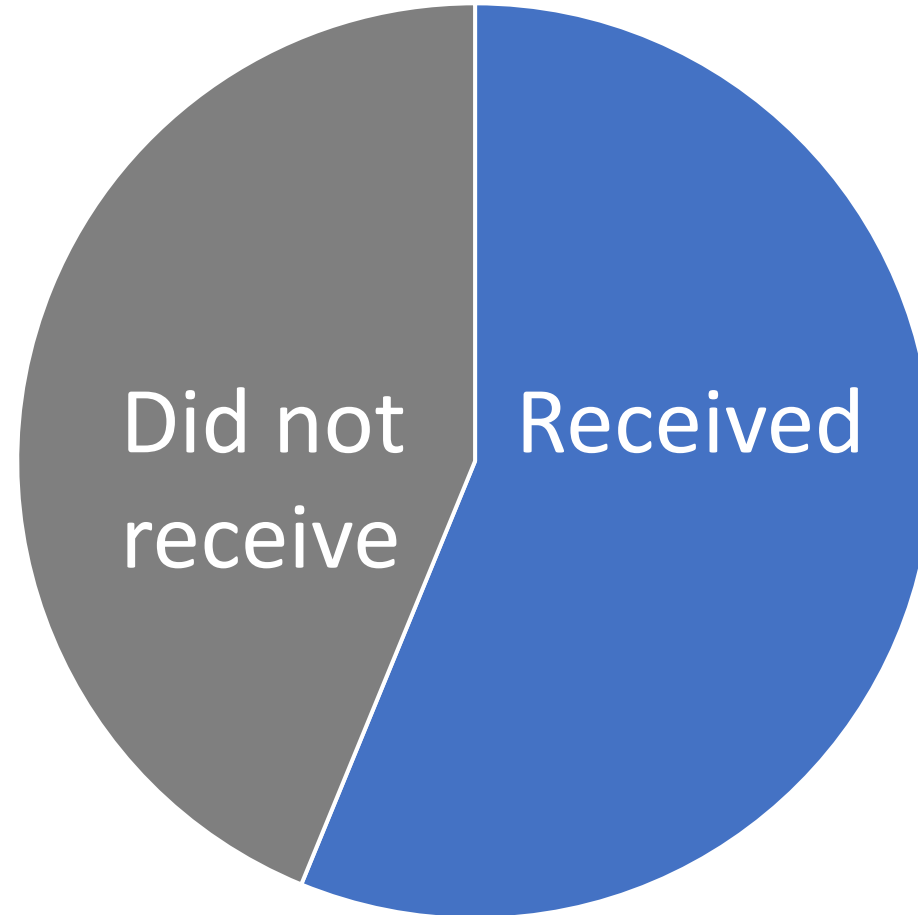
Scale-up is important

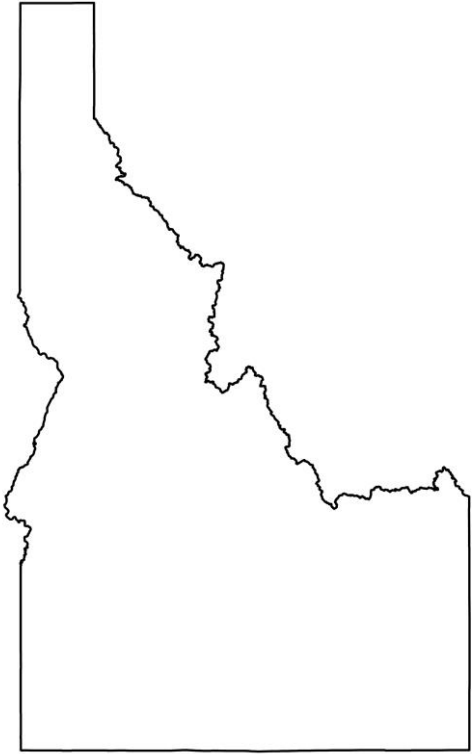
51.5 million
adults

Few get help

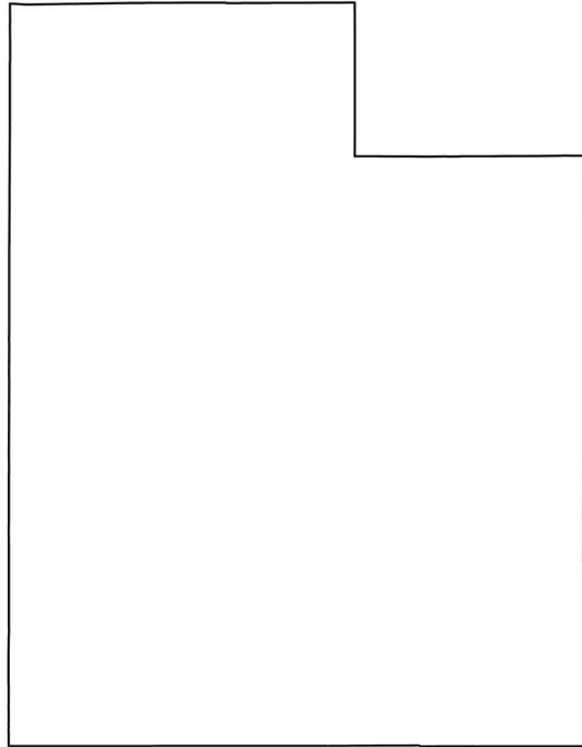


Even among those who said they needed it

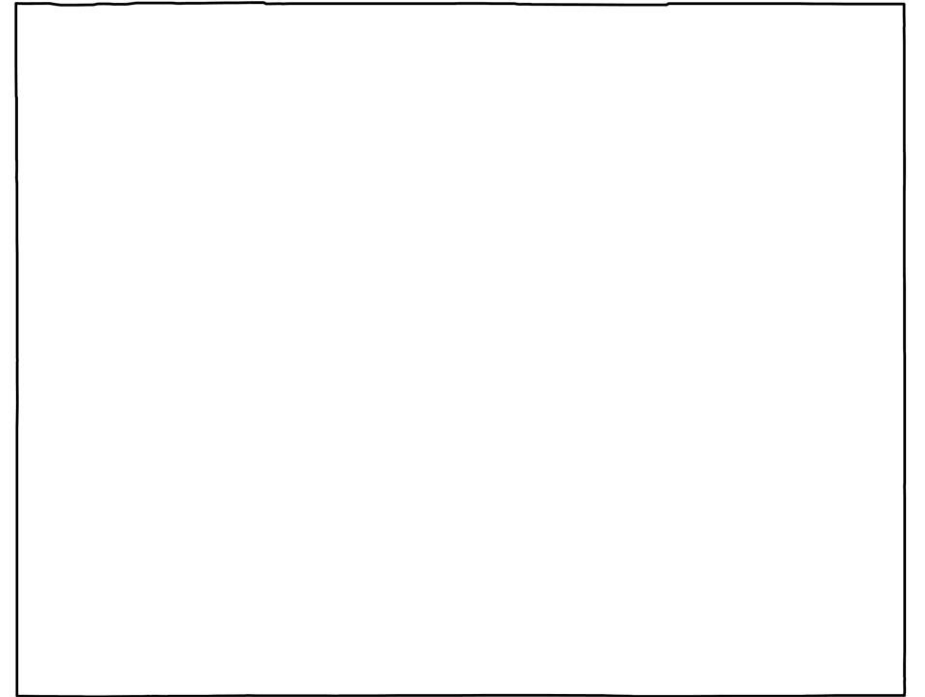




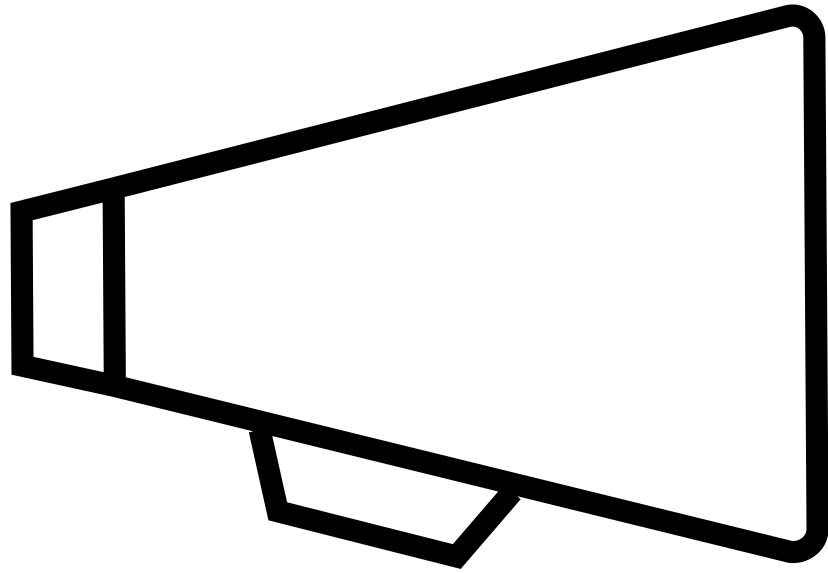
Idaho



Utah



Wyoming



Calls for scaling-up

Collins et al., 2011; Lancet Global Mental Health Group, 2007; Singla et al., 2018

Implementation and scale-up

Availability

Health equity

Scale-up

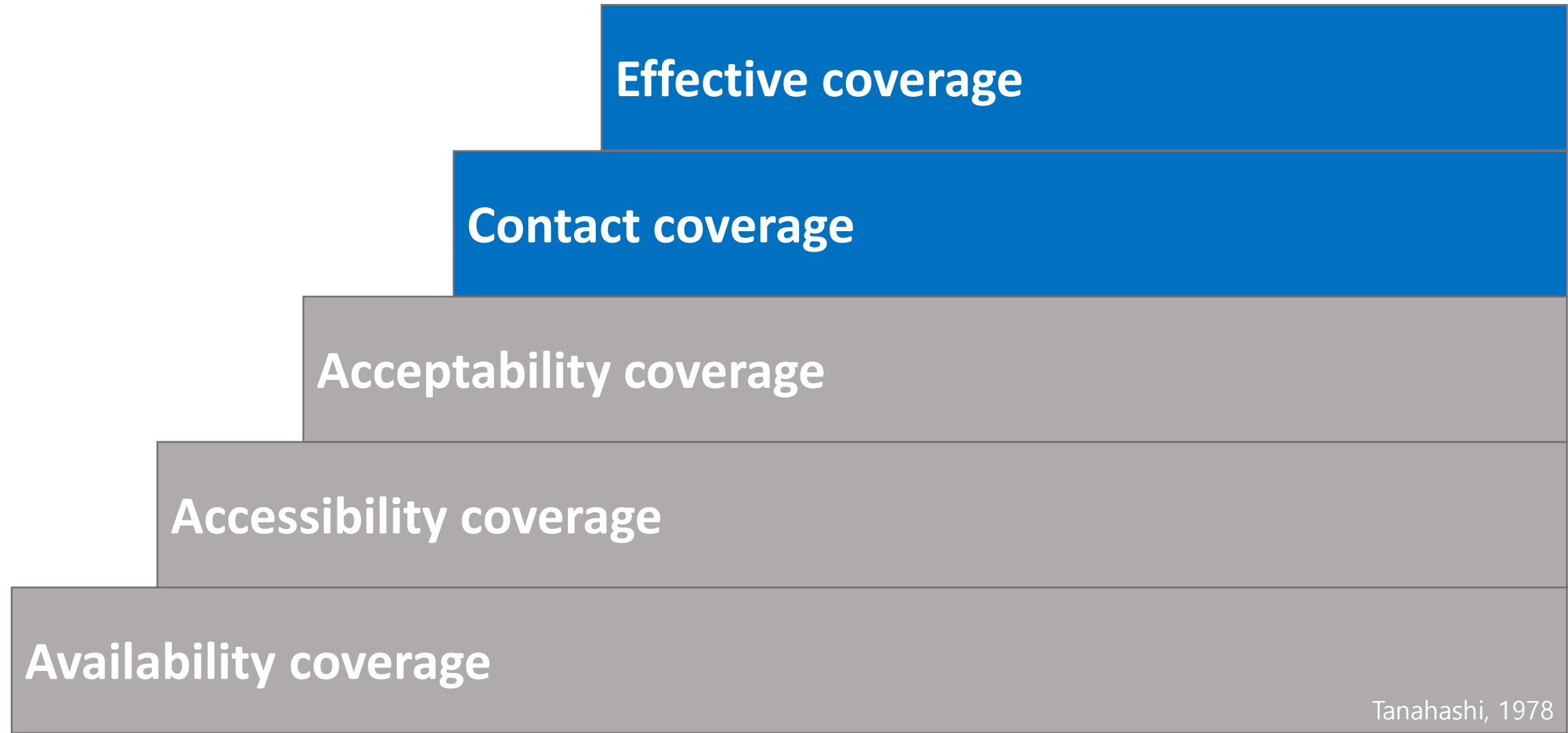
Operationalizing scale-up

What is scale-up?

“... Deliberate efforts to increase the impact of innovations successfully tested in pilot or experimental projects so as to benefit more people and to foster policy and program development on a lasting basis.”

“...more quality benefits to more people over a wider geographical area more quickly, more equitably, and more lastingly”

How do you capture population-level impact?



Operationalizing scale-up outcomes

Contact coverage = proportion of target population served

Effective coverage = proportion of the target population who improve

Equity = demographics/other indicators of population served and improved compared to target population

How do you calculate contact coverage?

Calculation

Data

People who used the service

Total population in need of service

Program

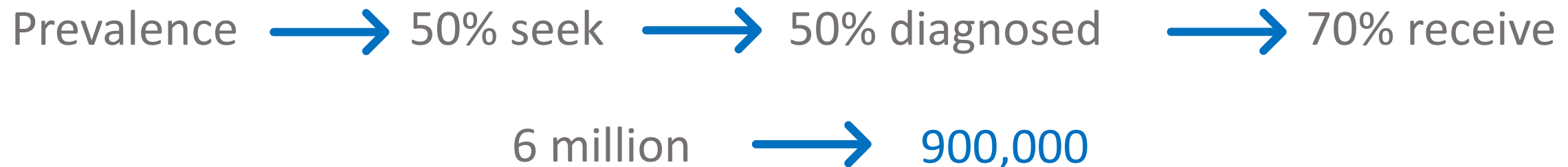
Survey

Claims

Registries

Survey

Literature



How do you calculate contact coverage?

Step	Description				
1	Initial denominator (youth population)	35,247			
2	Medi-Cal eligible	35,247	x	45.3%	= 15,967
3	Any mental disorder prevalence	15,967	x	32.8%	= 5,237
4	Non-severe impairment	5,237	x	92%	= 4,818
5	Likely to seek services	4,818	x	50.6%	= 2,438
	Specified denominator	2,438			

How do you calculate effective coverage?

Calculation

People who received benefit

Total population in need of service

Data

Clinical outcome

+

Program

Claims

Survey

Survey

Registries

Literature

How do you calculate equity?

Calculation

Data

Clinical outcome

+

People who received benefit

Program

Claims

Survey

Total population in need of service

Survey

Registries

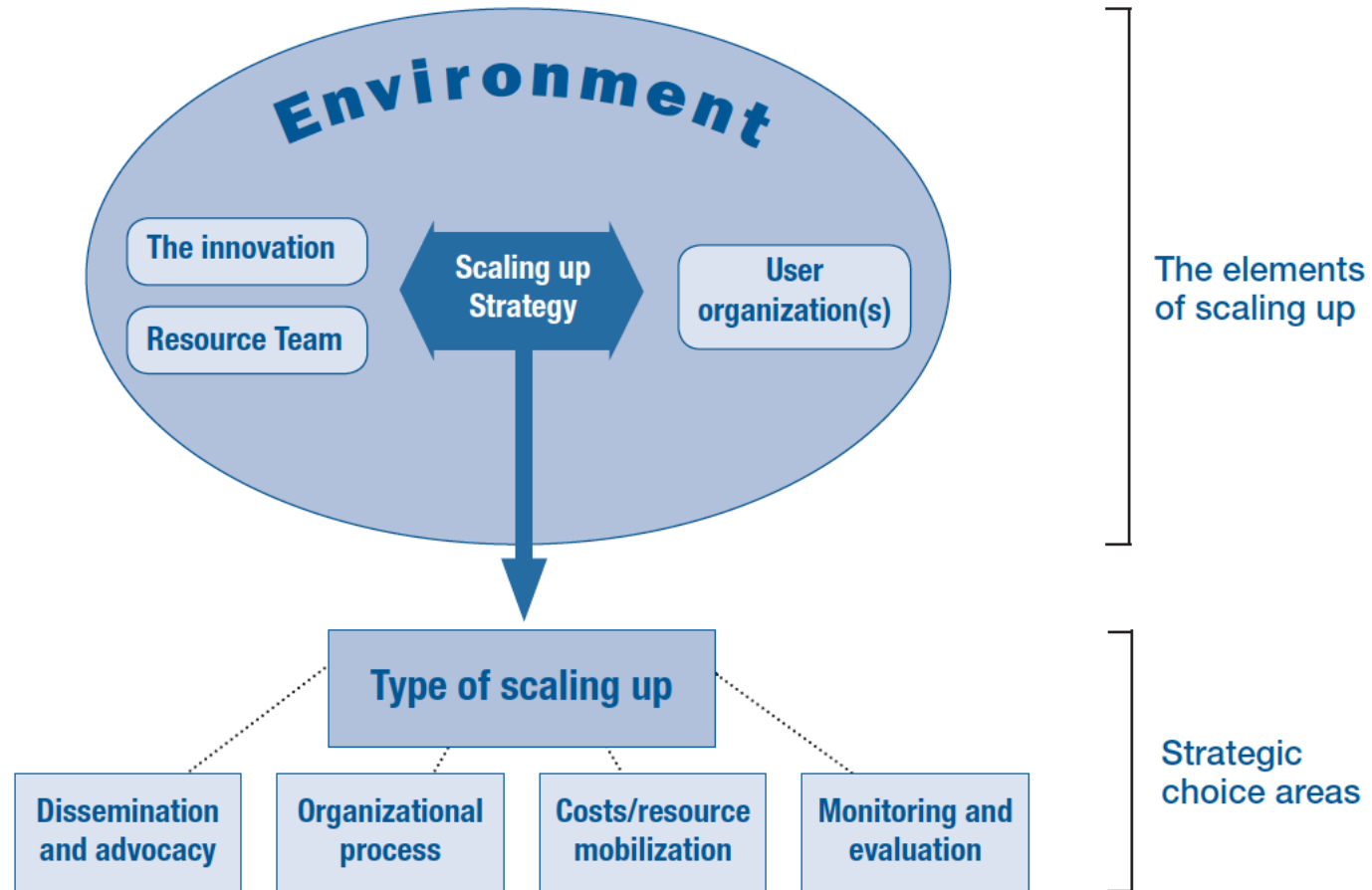
Literature

Analyze coverage rates by different groups

Unit of analysis

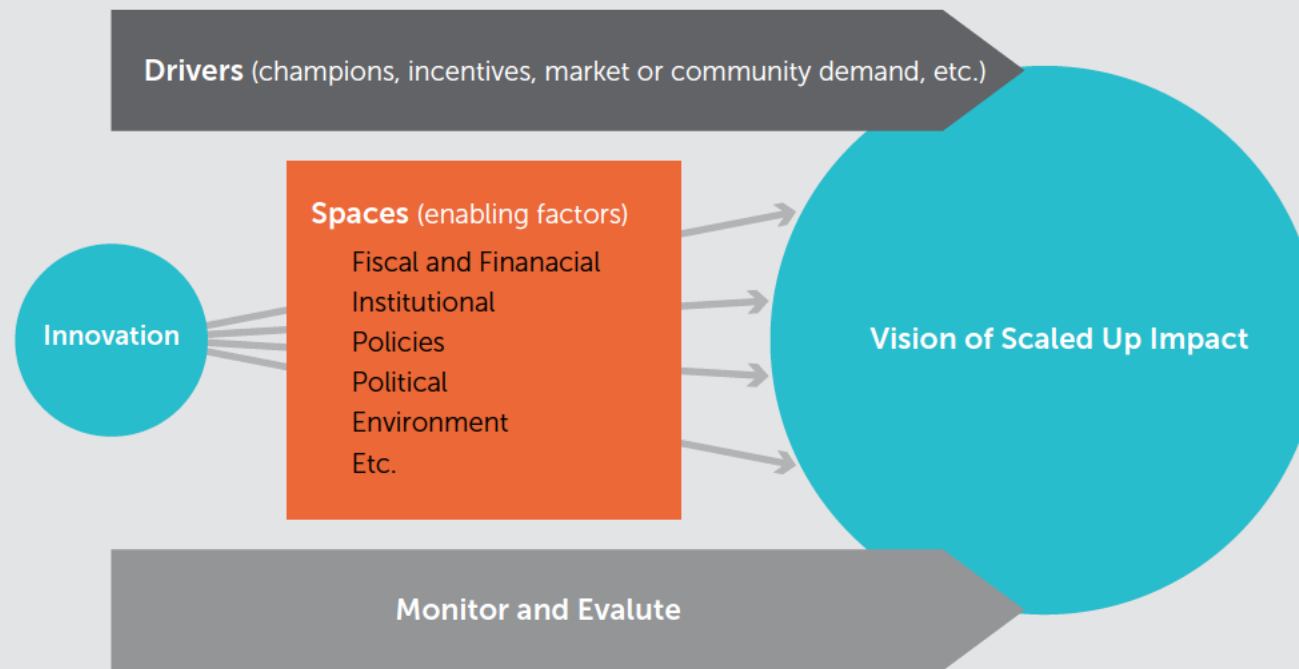
Scalable unit = the smallest representative facsimile of the system targeted for full-scale implementation

What drives scale-up?



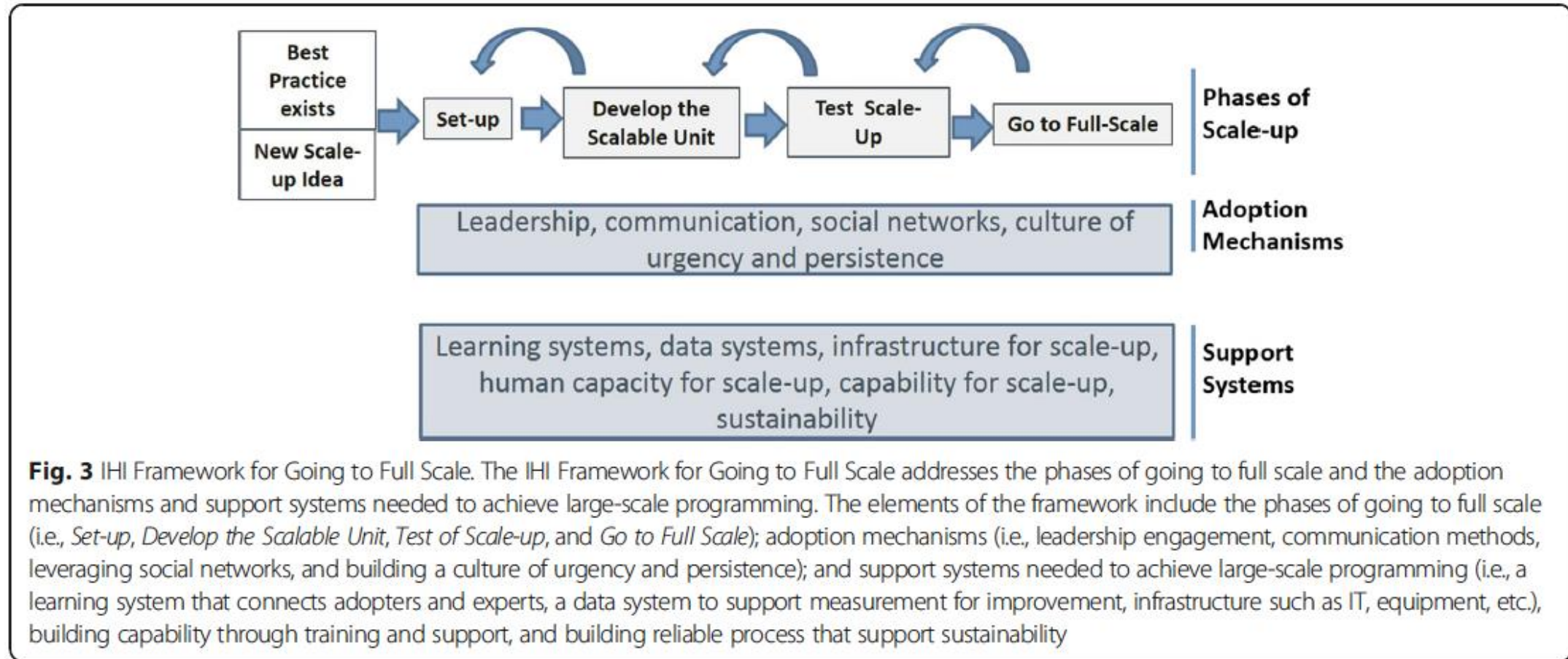
What drives scale-up?

Figure 2: Key components of a systematic scaling up pathway

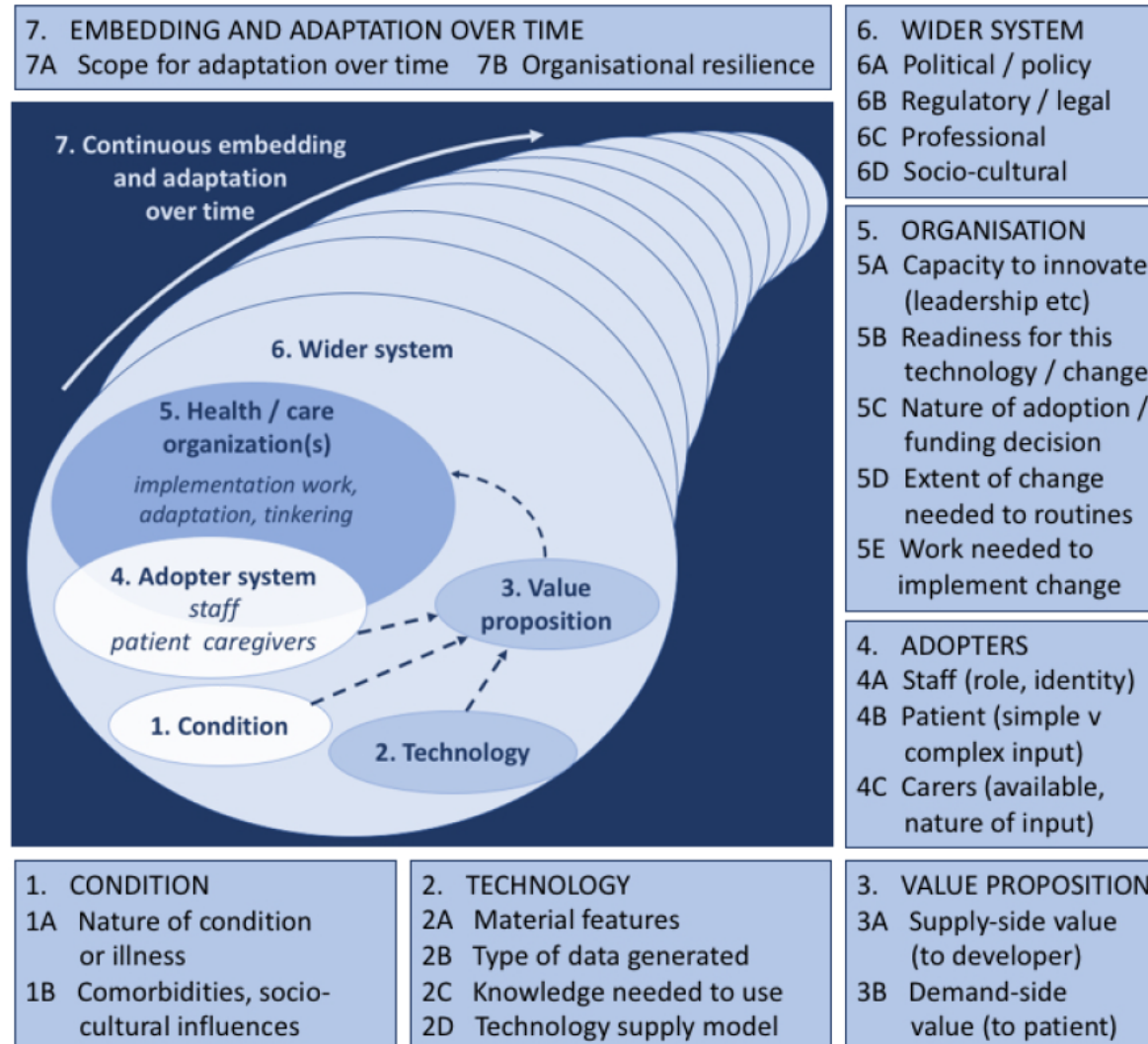


Source: Linn

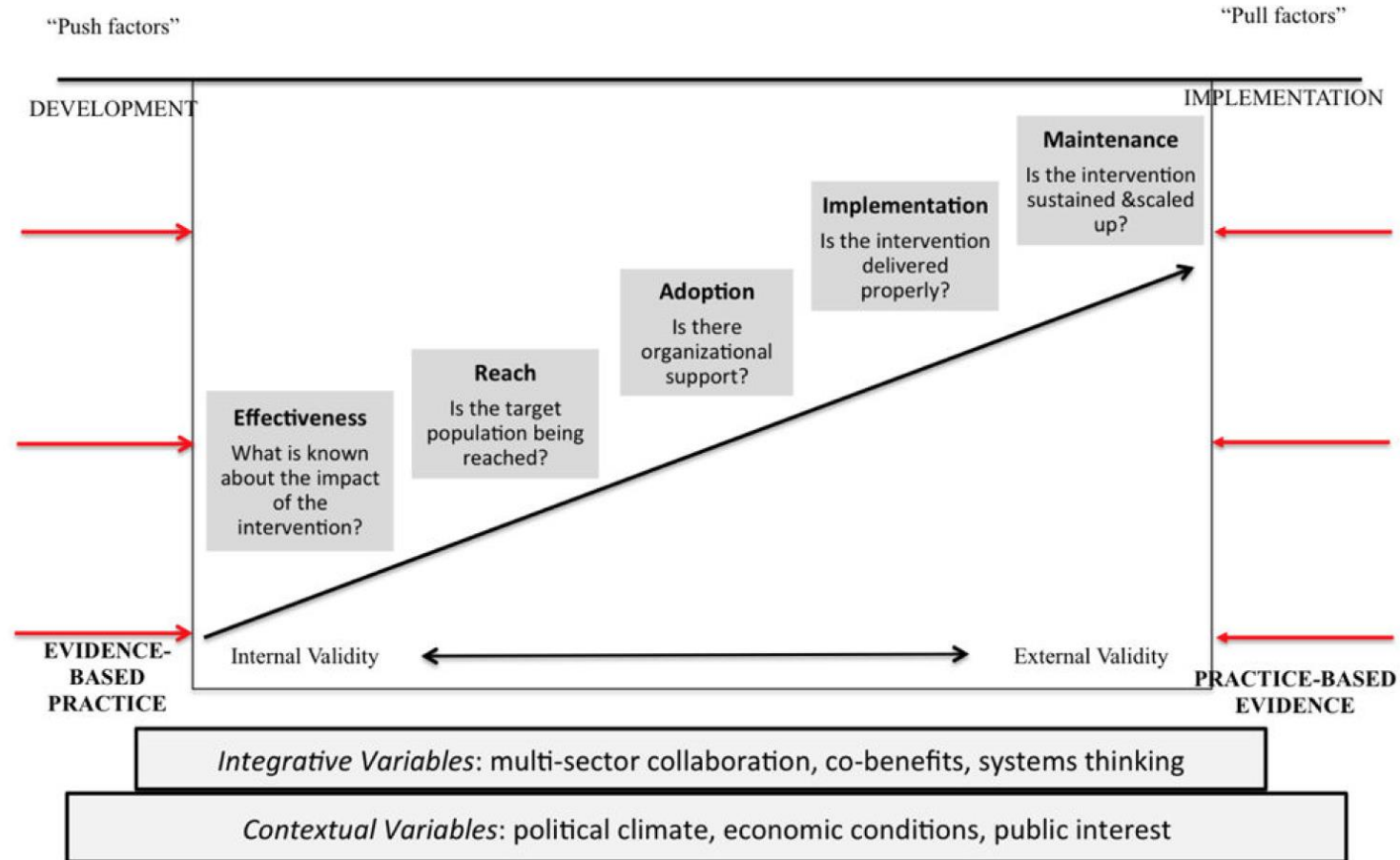
What drives scale-up?



What drives scale-up?

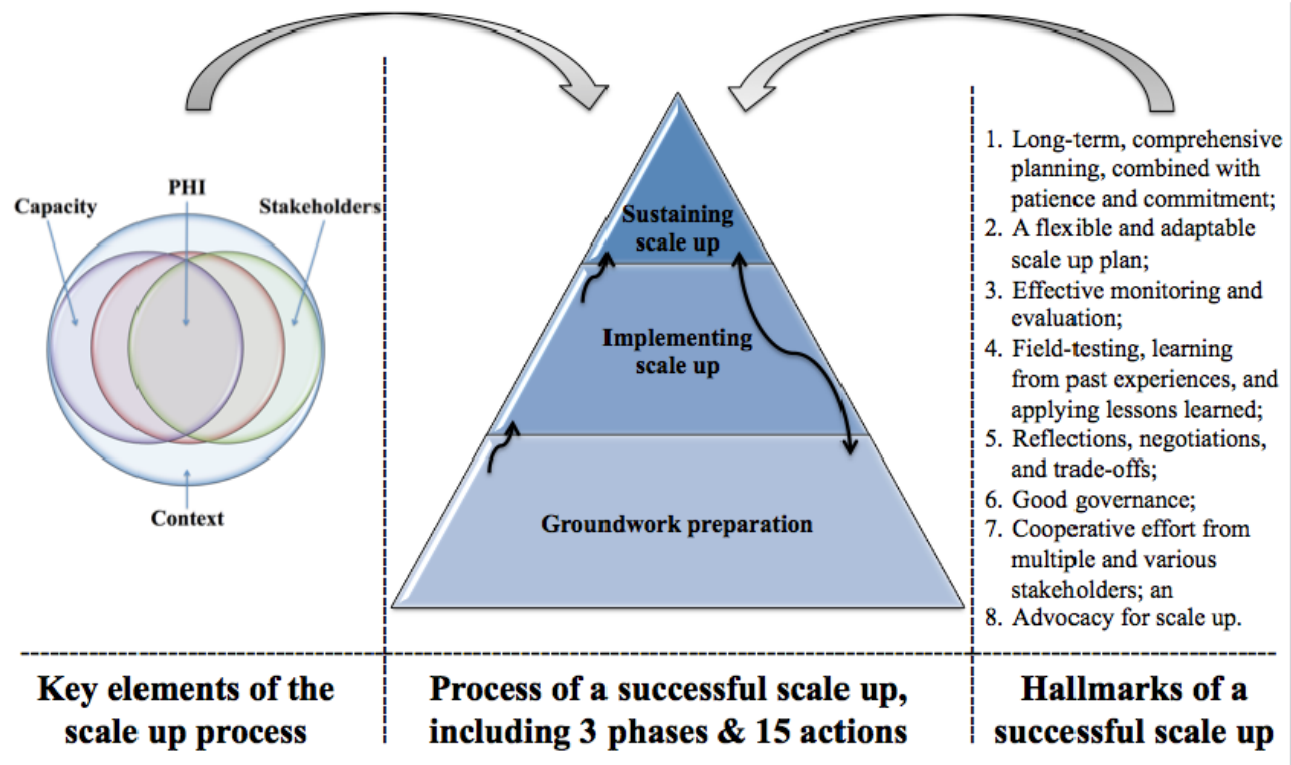


What drives scale-up?

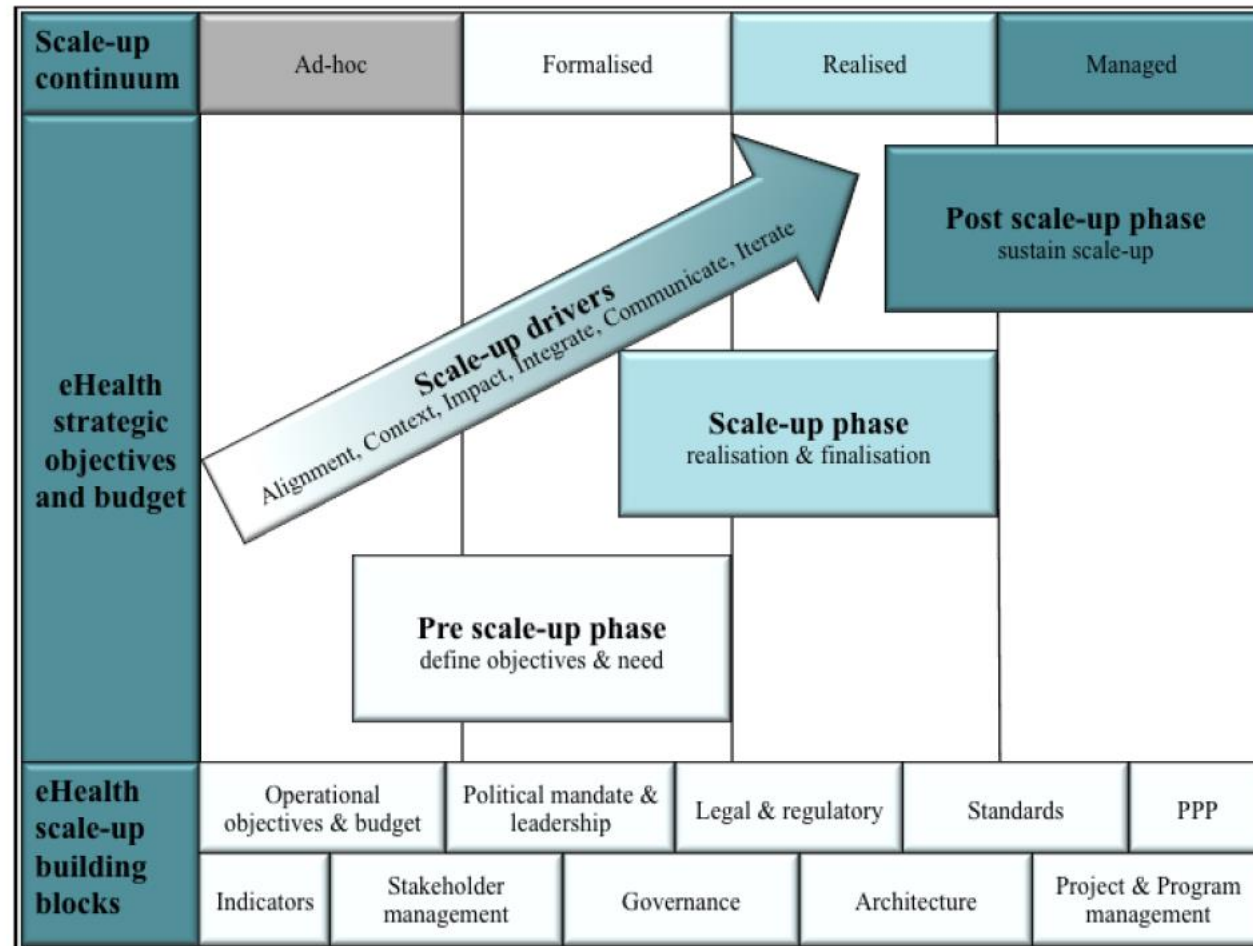


What drives scale-up?

Figure 5.1: Process of successfully scaling up a population health intervention (PHI)



What drives scale-up?



What drives scale-up?

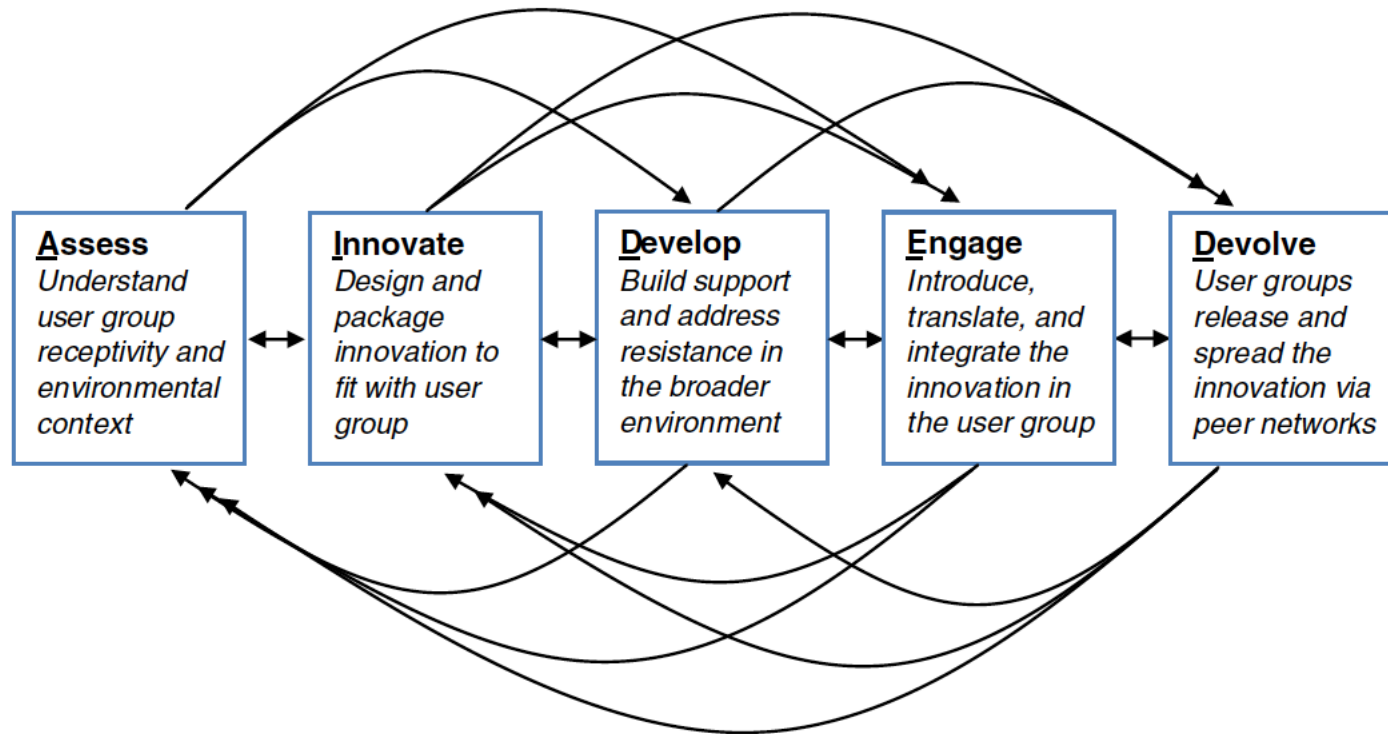
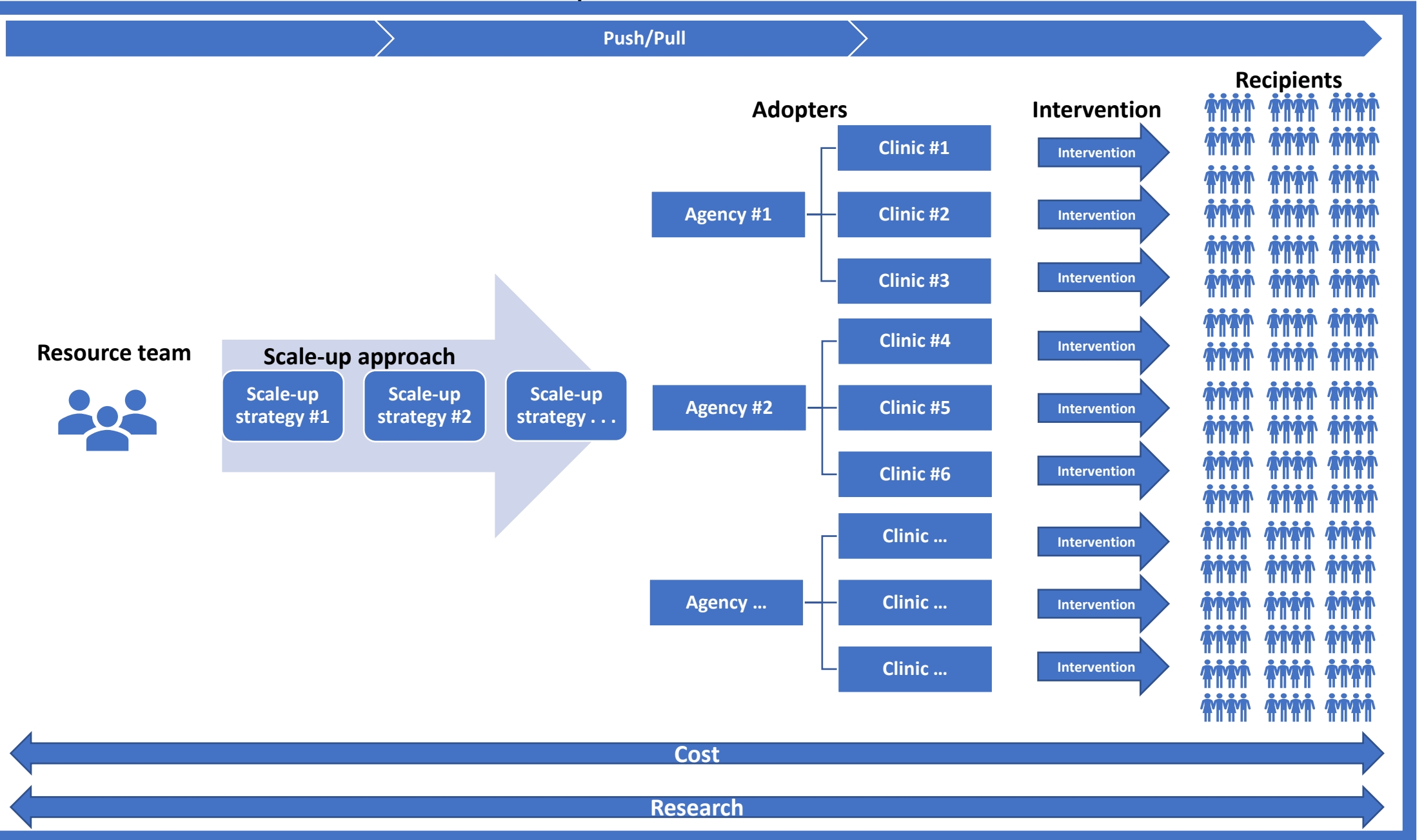


Figure 1 Schematic of the AIDED model for scaling up family health innovations. Legend: The figure presents the five non-linear, interrelated actions of the AIDED model: 1) assess the landscape, 2) innovate to fit user receptivity, 3) develop support, 4) engage user groups, and 5) devolve efforts for spreading innovation. The model suggests that successful scale up occurs within a complex adaptive system, characterized by interdependent parts, multiple feedback loops, and several potential paths to achieve intended outcomes. Source: Bradley et al. [9]. Copyright is held by the authors under the Creative Commons License and permission is granted for reproduction in this manuscript.

Sociopolitical context

Sociopolitical context

Sociopolitical context



Viewing scale-up from a systems
perspective

Scale-up as a complex adaptive system

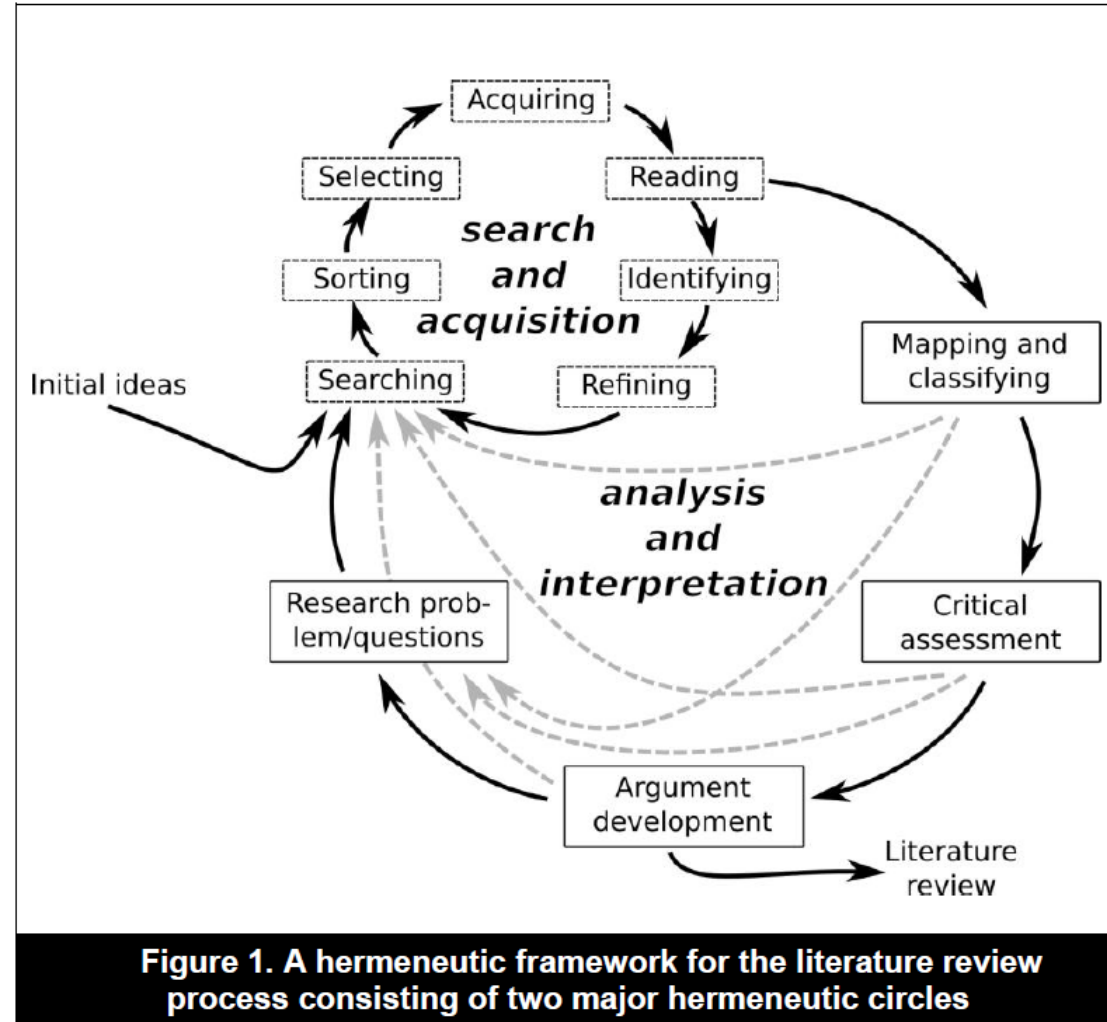
Characteristics of a CAS

- Components
- Inputs/outputs
- Behavior informed by rules
- Interaction among components
- Influenced by environment
- Adaptive, changes over time
- Self-organizing
- Produce patterns

Aim: Create a feedback-based scale-up framework using system science

Bringing together the constructs

Hermeneutic approach



Bringing together the constructs

Searching and sorting

Medline, CINAHL, PsycINFO, Embase, Web of Science, Google Scholar

Scale-up + framework + review

Bringing together the constructs

Selecting and acquiring

One reviewed, a second reviewed exclusions

Resolved discrepancies

Bringing together the constructs

Reading and mapping

Looking for constructs and their relationships

Pulled out the key constructs from frameworks

Thematic analysis on constructs

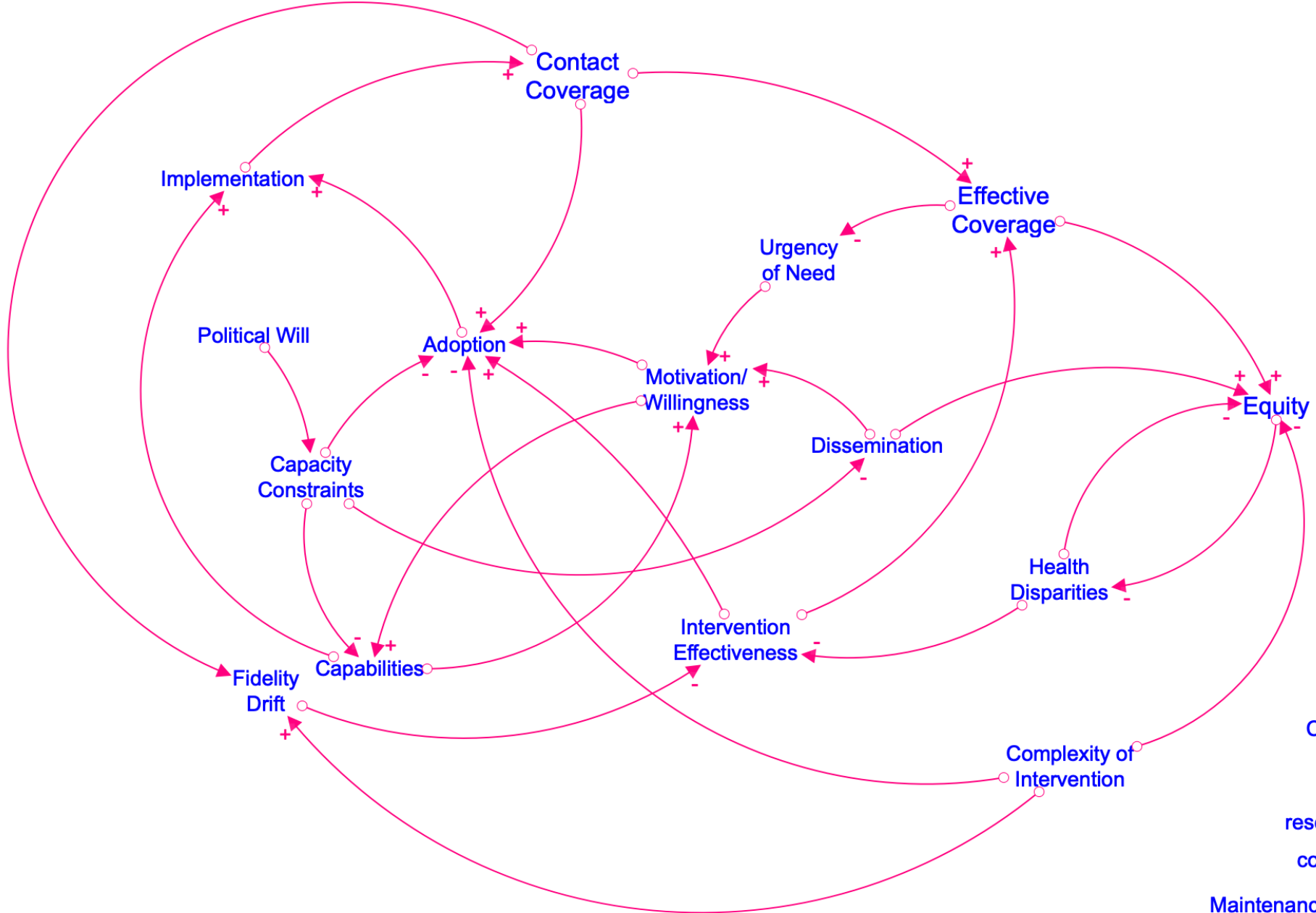
Building the CLD

Build initial model

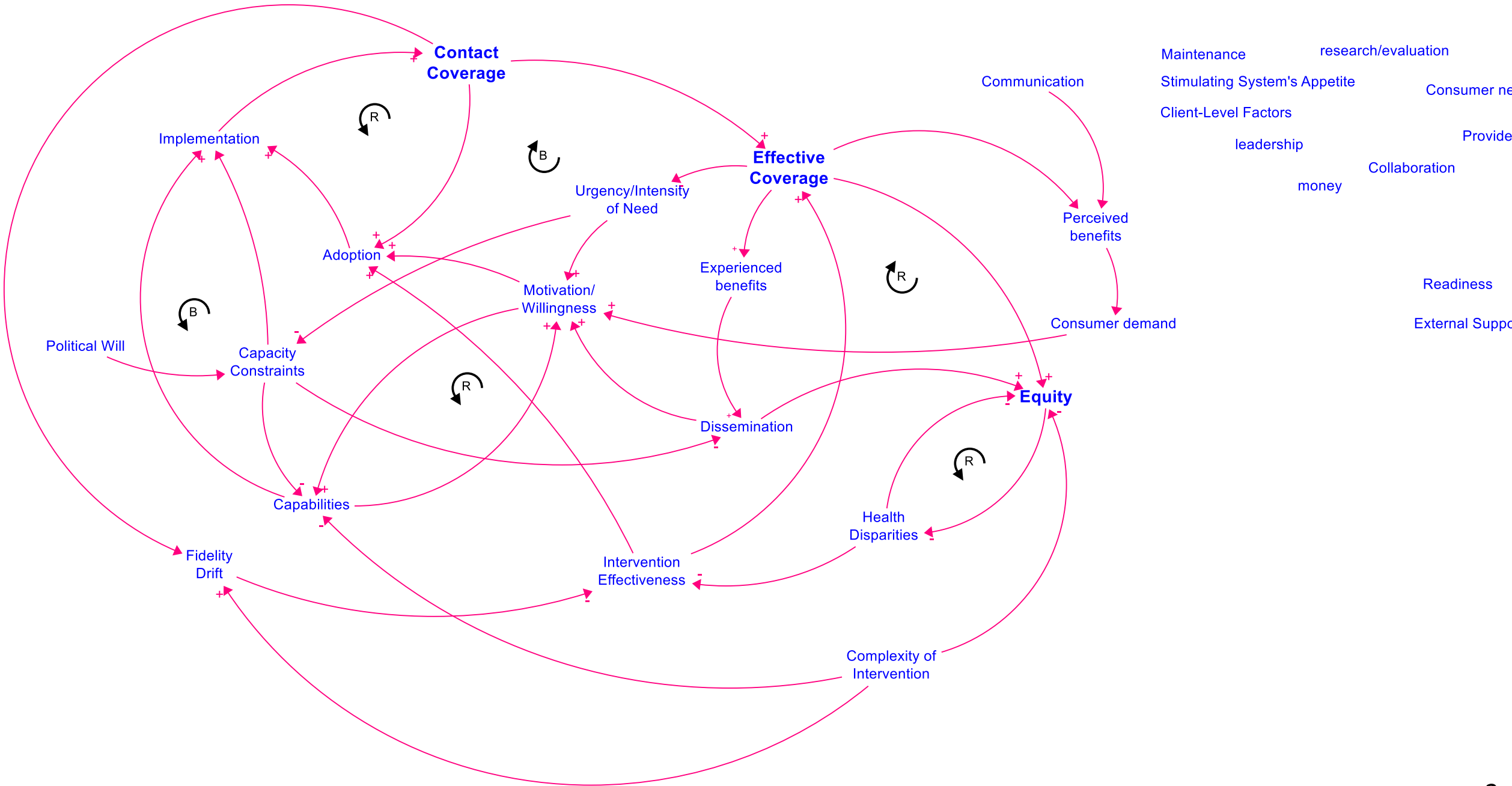
Incorporate non-repetitive constructs

Iterate

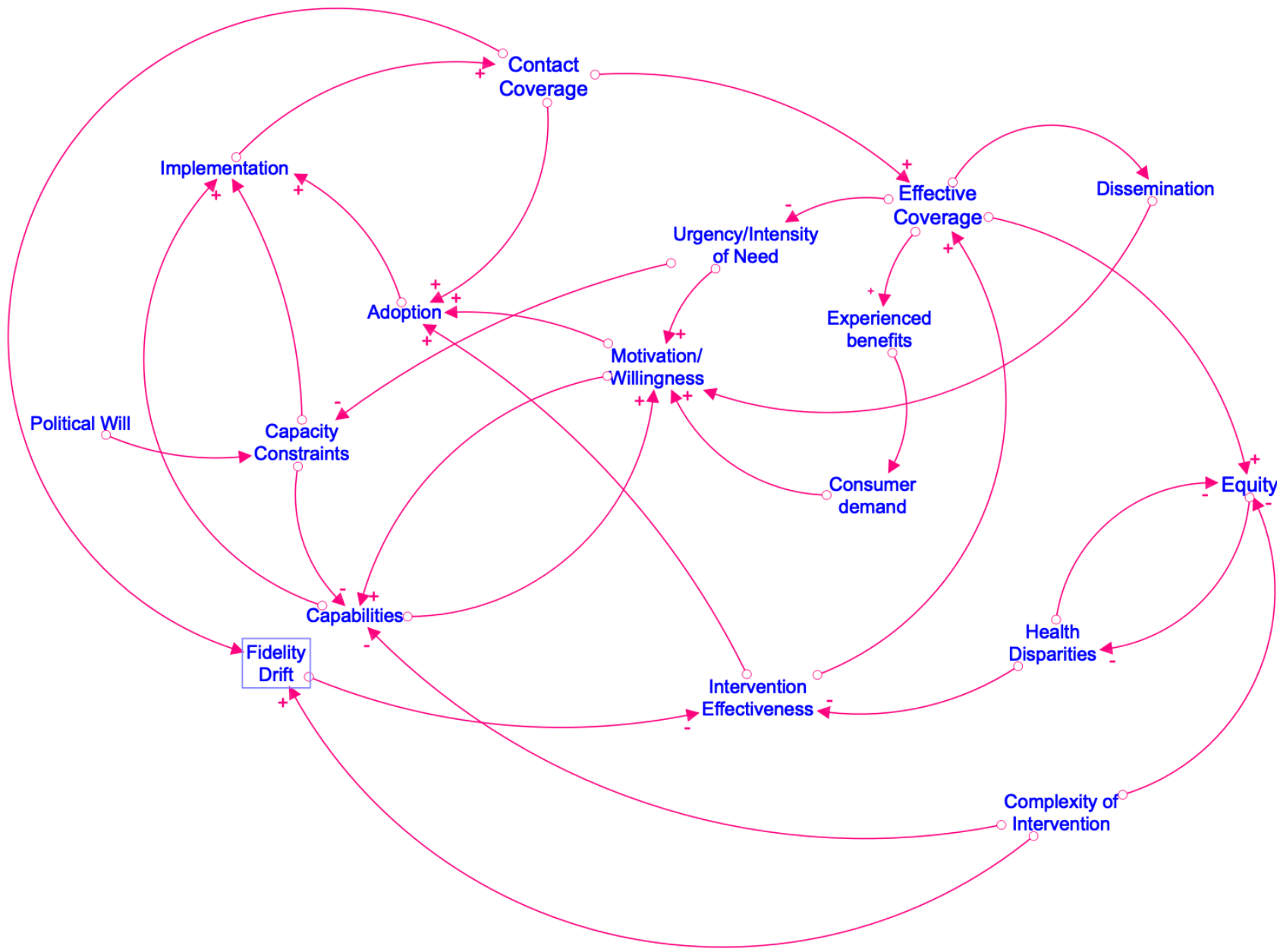
Balance parsimony and completeness



Collaboration
 money
 research/evaluation
 communication
 Maintenance
 Stimulating System's Appetite
 Client-Level Factors
 leadership



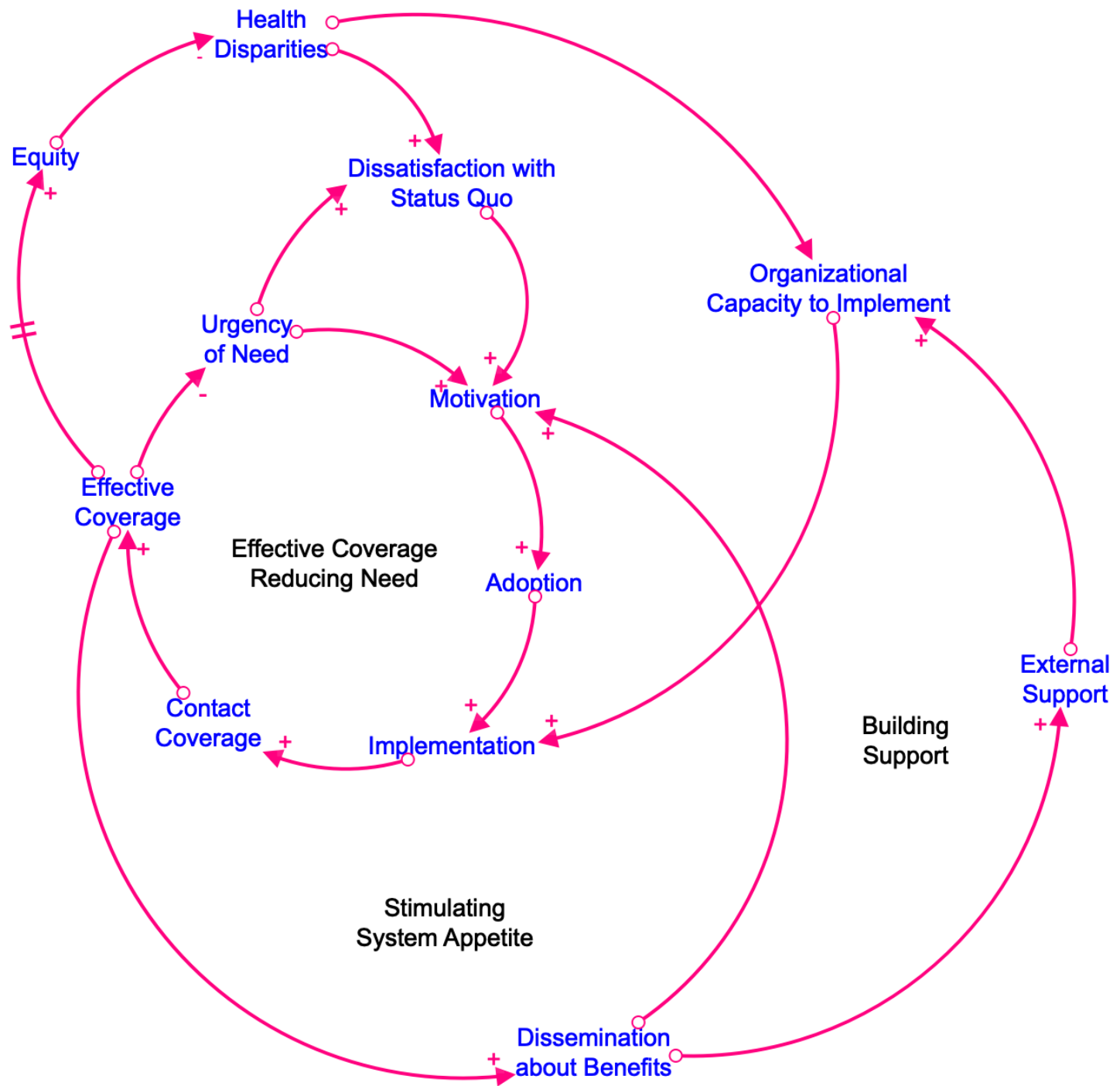
Maintenance
 Stimulating System's Appetite
 Client-Level Factors
 research/evaluation
 Consumer ne
 Provider
 leadership
 money
 Collaboration
 Readiness
 External Suppo

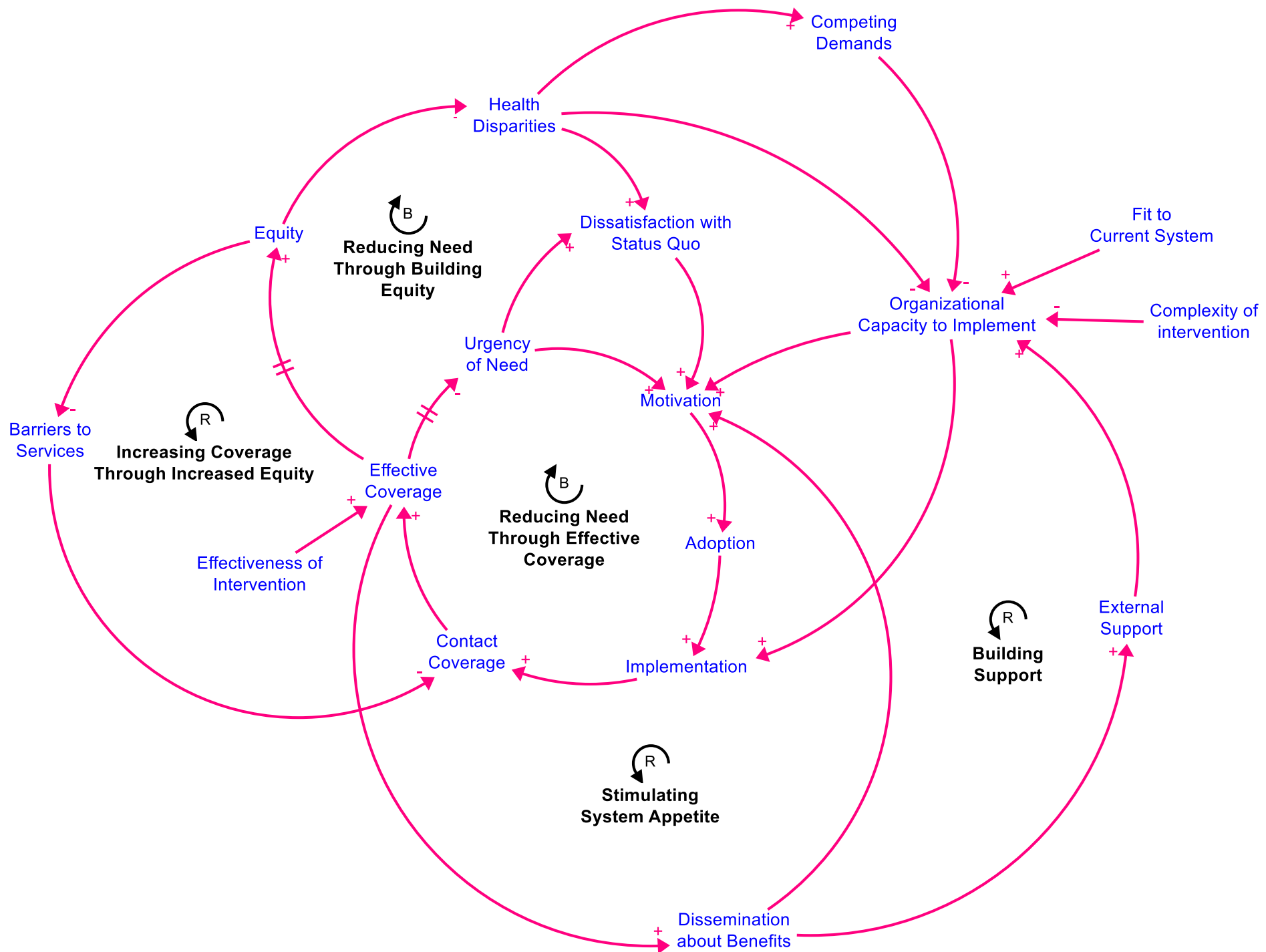


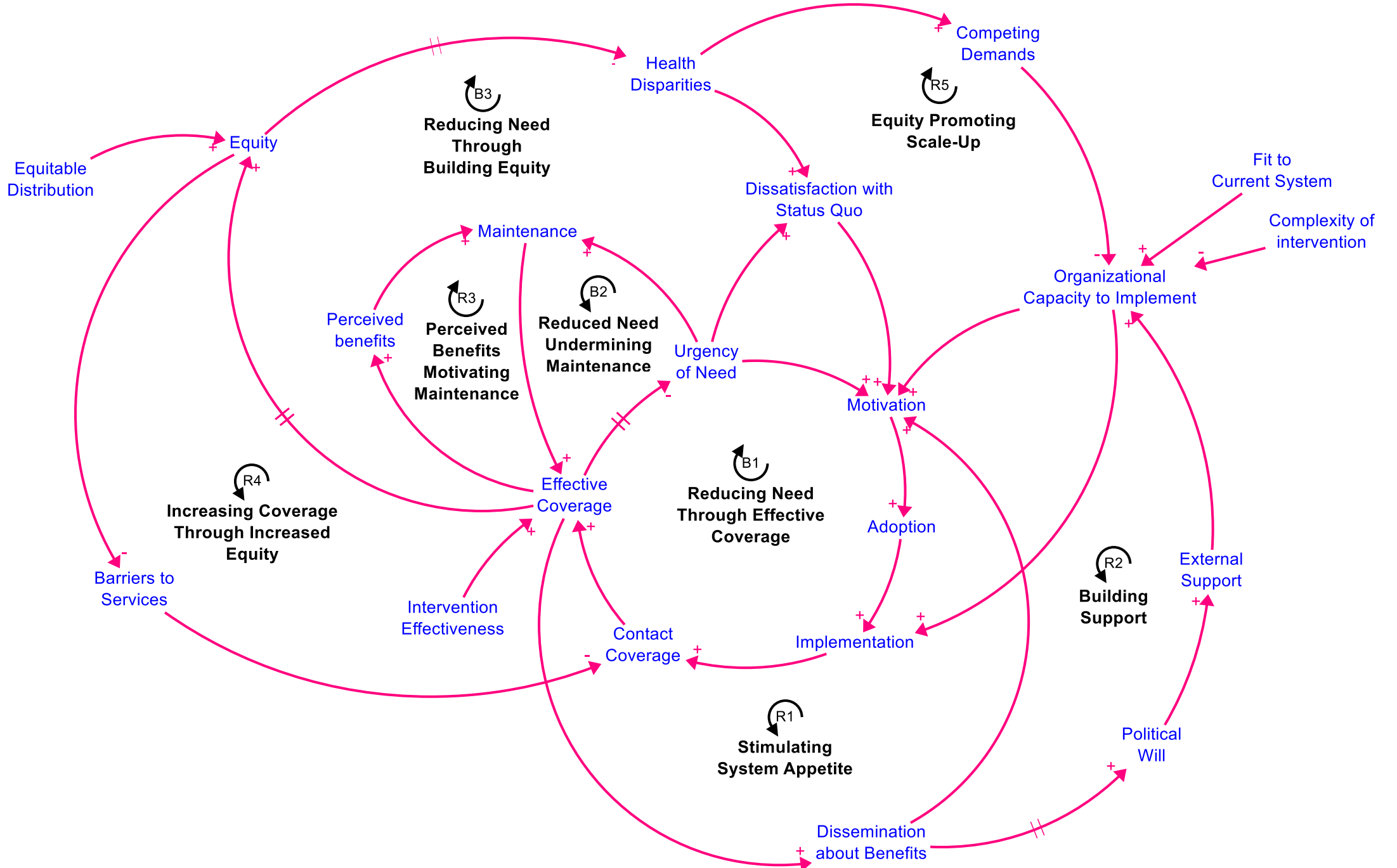
Maintenance
 Stimulating System's Appetite
 Client-Level Factors

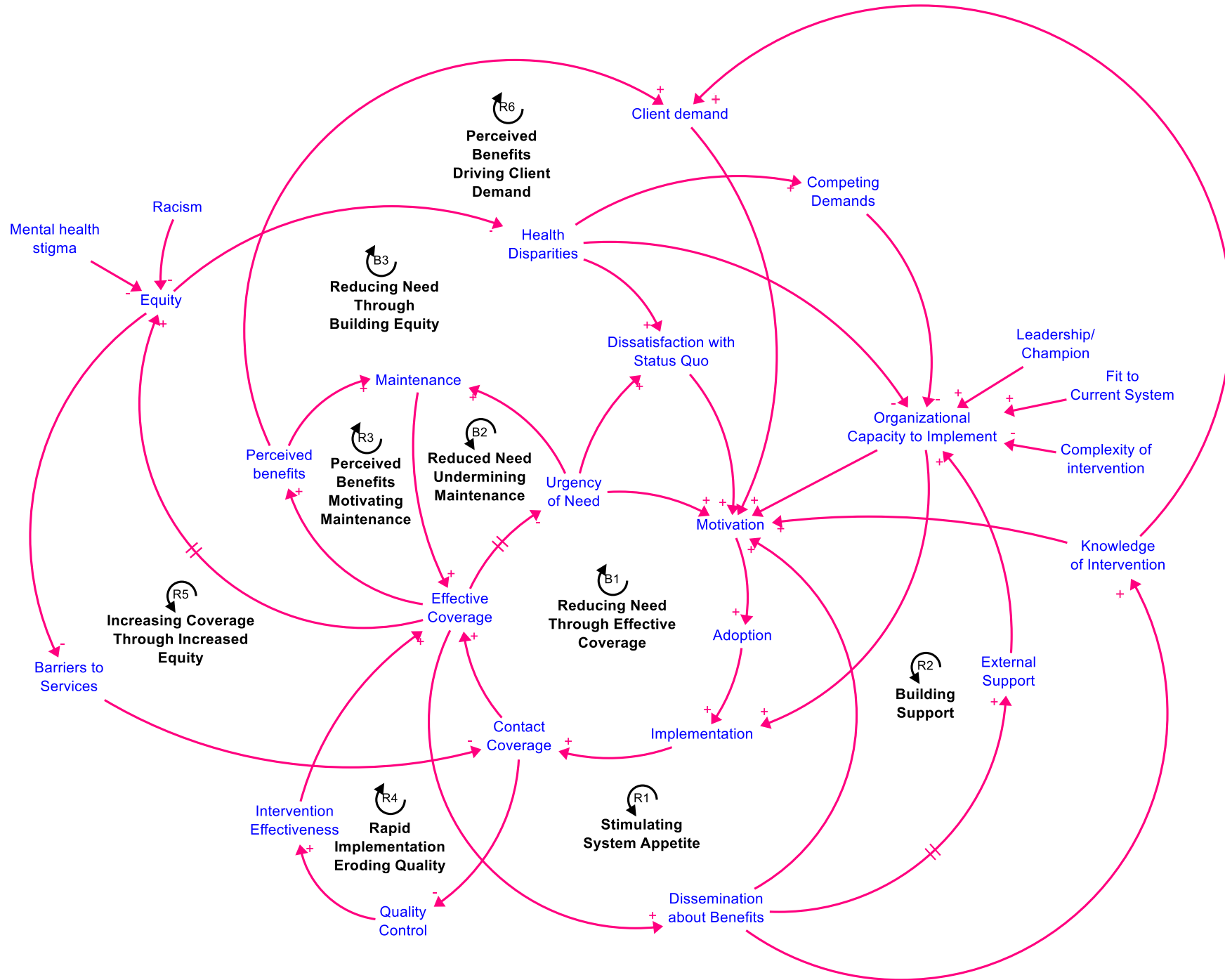
research/evaluation
 Consumer need
 Provider need
 Collaboration
 Readiness
 External Support

leadership
 money

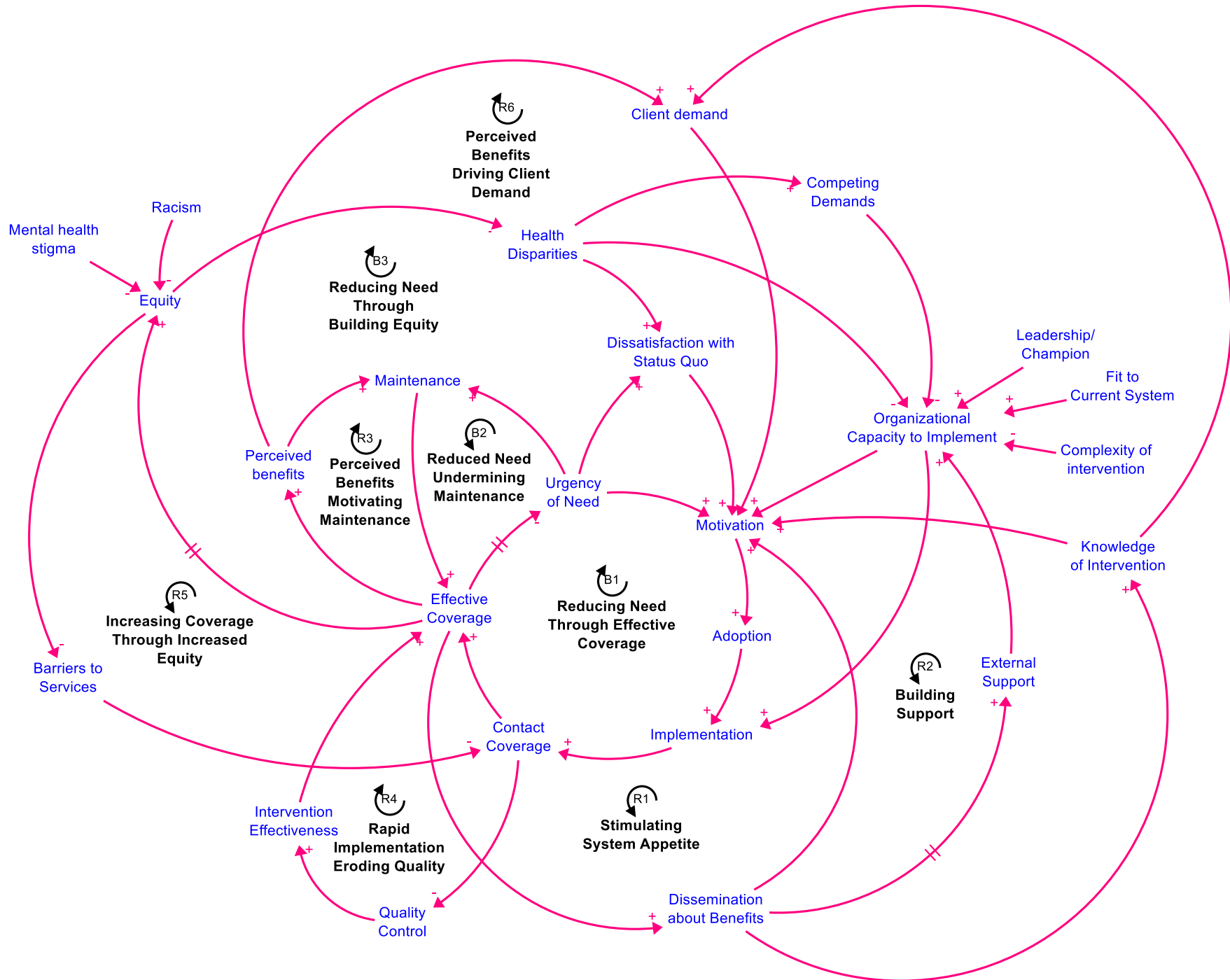


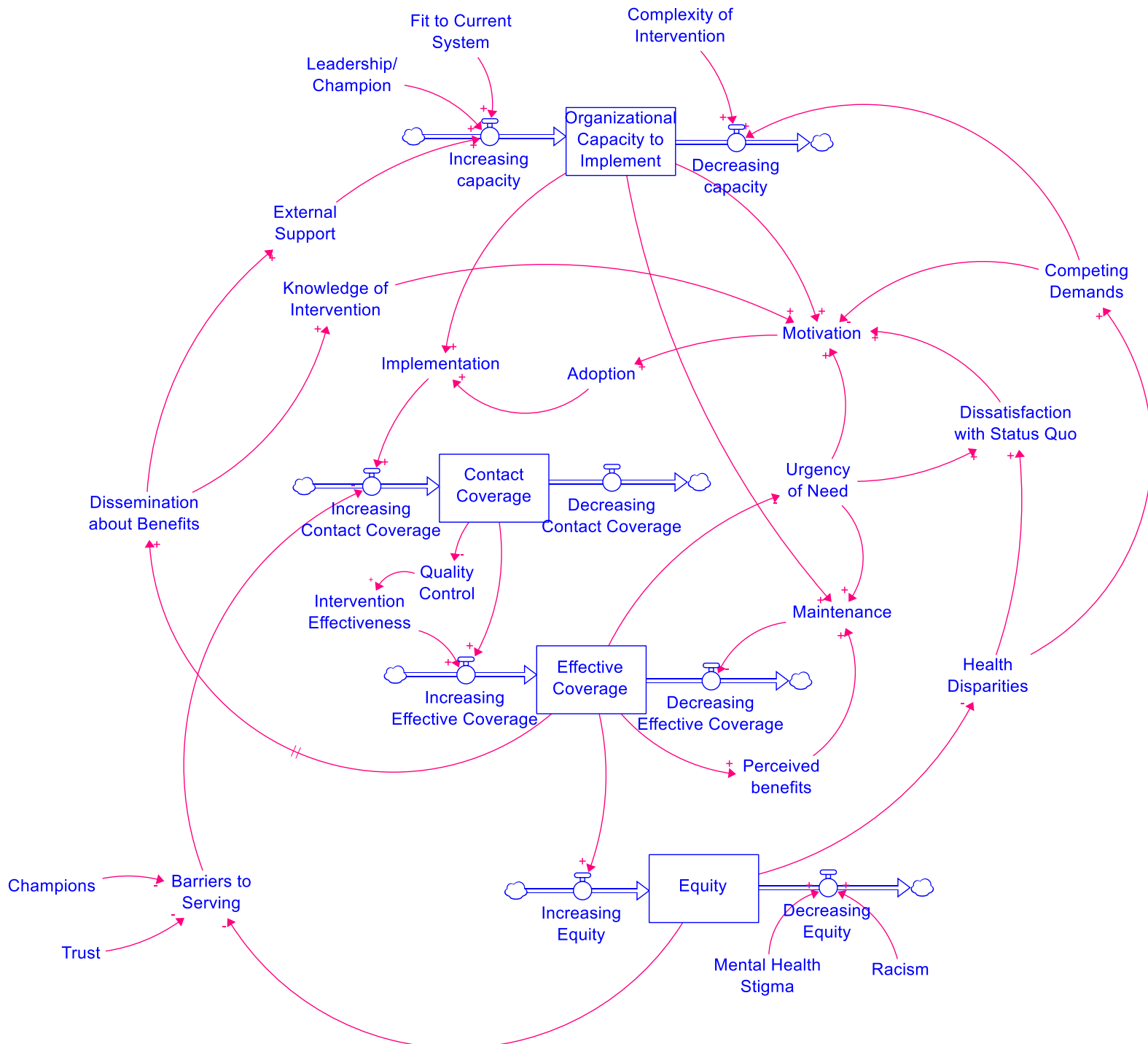






Results

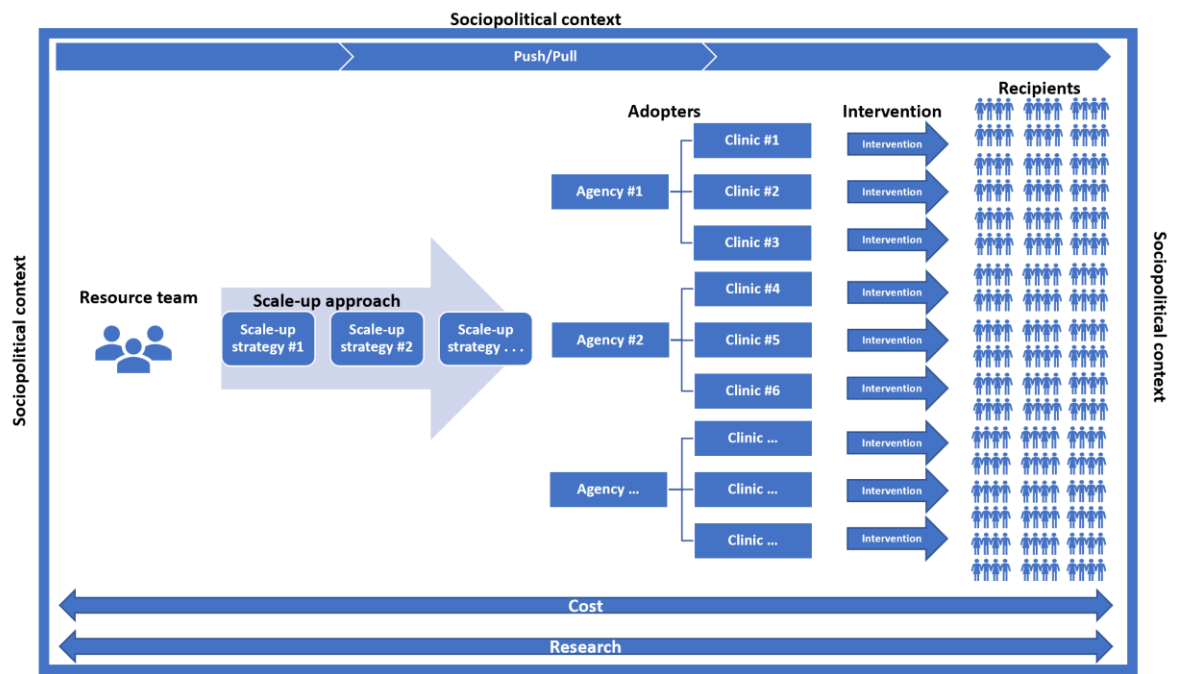




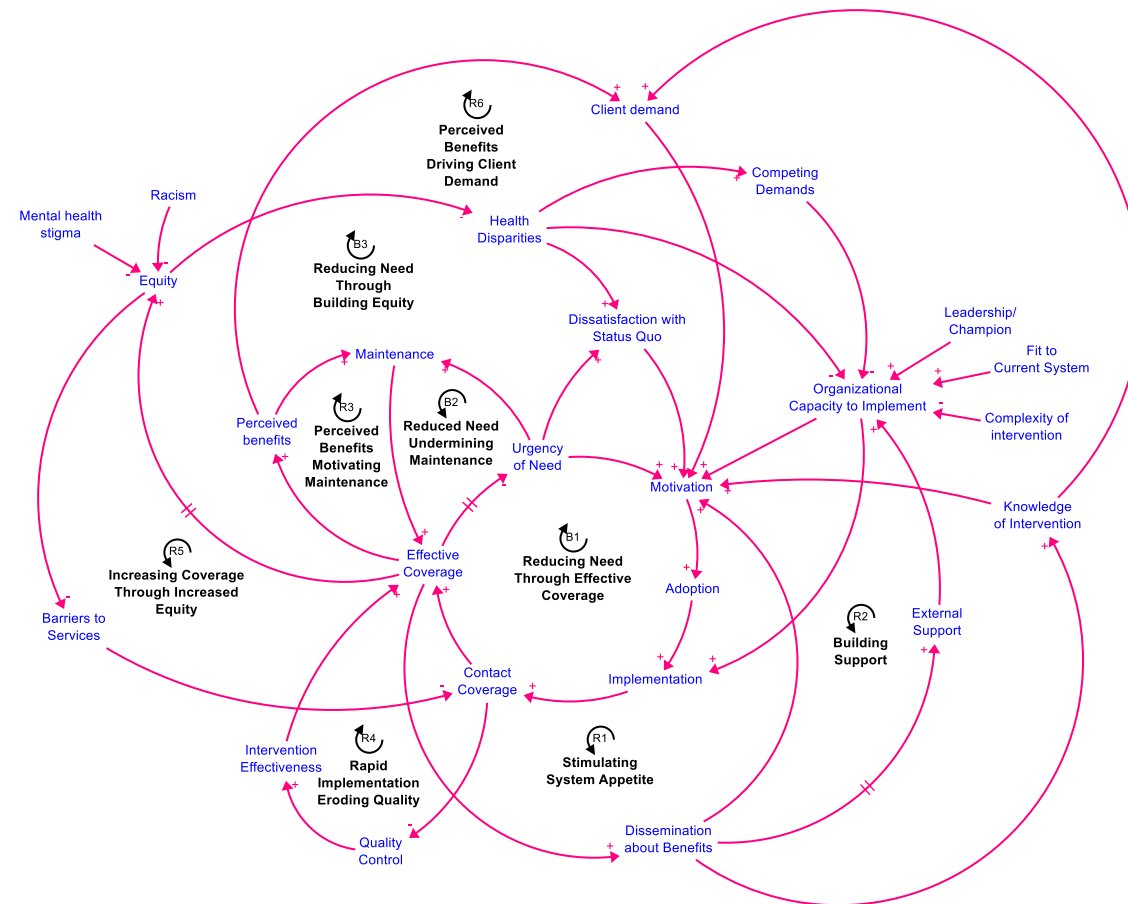
Discussion

Some initial take-aways

- Incorporating scale-up with feedback loops
- Stocks – scale-up is something you accumulate and maintain (filling, leaks)
- Consolidate, broad insights
- Gaps motivate actions and actions are constrained by the context



Hooley et al., 2018



Some initial take-aways

- Health disparities undermine implementation by creating competing demands (B4)
- Equity can fuel scale-up by removing barriers to services for marginalized populations (R4)
- Striving for equity is the right thing to do and facilitates scale-up

Some initial take-aways

- Considering urgency of needs, competing demands, and dissatisfaction with the status quo helps explain why orgs may or may not adopt an intervention; identifying a need, acting, and then meeting that need (B1 and B3)
- Effective scale-up can be a doubled edged sword! If it fixes the problem (i.e., reduces urgency need), it can slow motivation for both continued scale-up efforts (B1) as well as maintenance of the intervention (B2). At the same time, organizations/funders want to support effective interventions, so getting good results might support ongoing sustainment of the intervention (R3).
- Dissemination is a key tool for motivating scale-up (R1)

Thank you!

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