

MODULE 5 | LECTURE 5A

Outcomes to evaluate scale up success

Enola Proctor, Virginia McKay, and Cole Hooley
Washington University in St Louis – USA
Brigham Young University – USA

Lecture overview

Implementation outcomes:
importance and role

- Sustainment: Conceptualizing, Models, and Measures
- Scale up: Frameworks, Factors, and Metrics

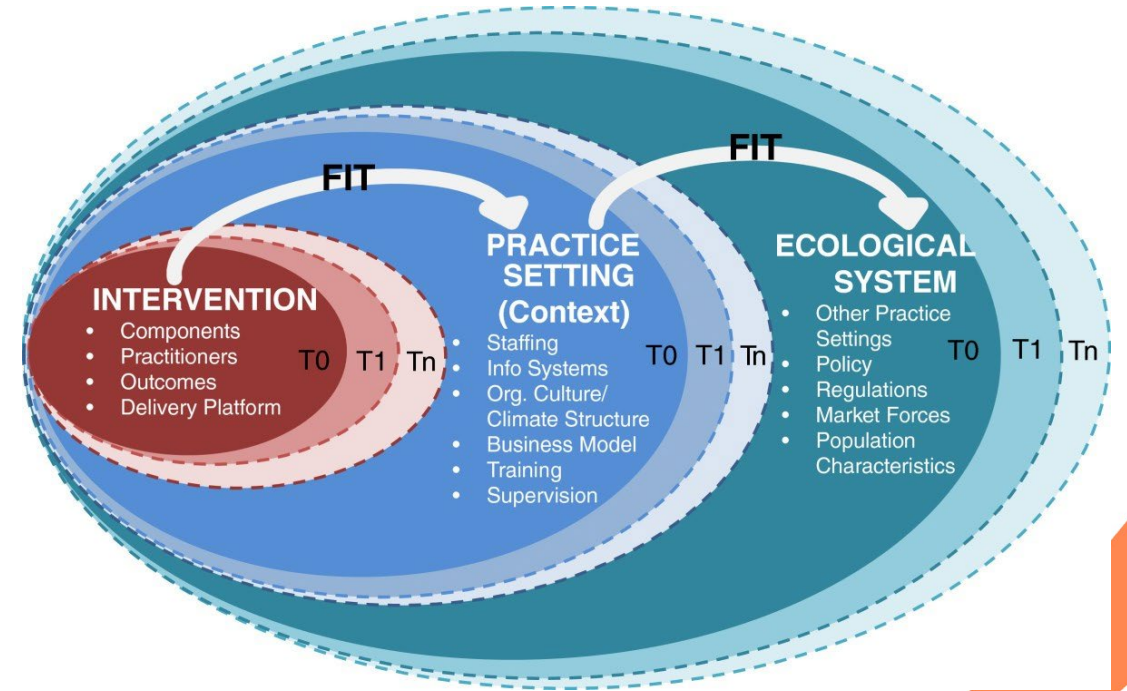


IMPLEMENTATION OUTCOMES

- Signals of implementation success
- Contribute to such outcomes as
 - Service effectiveness, efficiency
 - Health service user's clinical improvement and improvements to population health
- As “outcomes,” we can pursue them by employing implementation strategies

Conceptualizing

- **Sustainment** – a program or policy that *has been* sustained and continues to provide benefit for target communities, often after external support has ended
- **Sustainability** – the *ability* to maintain programming and its benefits over time -
 - In other words – are the right factors in place to sustain over time?



Dynamic Sustainability Framework - Taken from Chambers, Glasgow, and Stange (2013)

Determinants & Strategies

- Similar to adoption and implementation, a mix of factors at multiple levels
 - ❖ not just money
- Strategies should align with determinants

Taken from Shelton, Cooper, and Wiltsey-Stirman (2018)

Models for Operationalizing and Research Design

General Models

- Adjusting a general model to fit your sustainability research question
 - e.g., Consolidated Framework for Implementation Research (CFIR)

Sustainability-Specific Models

- Selecting a sustainability-focused model
 - e.g., Practical, Robust Implementation and Sustainability Model (PRISM)

Measures

Sustainability (determinants)

- A number of general measures that can be adjusted to specific context, e.g.,
 - Clinical sustainability assessment tool (CSAT)
 - Sustainability implementation scale (SIS)

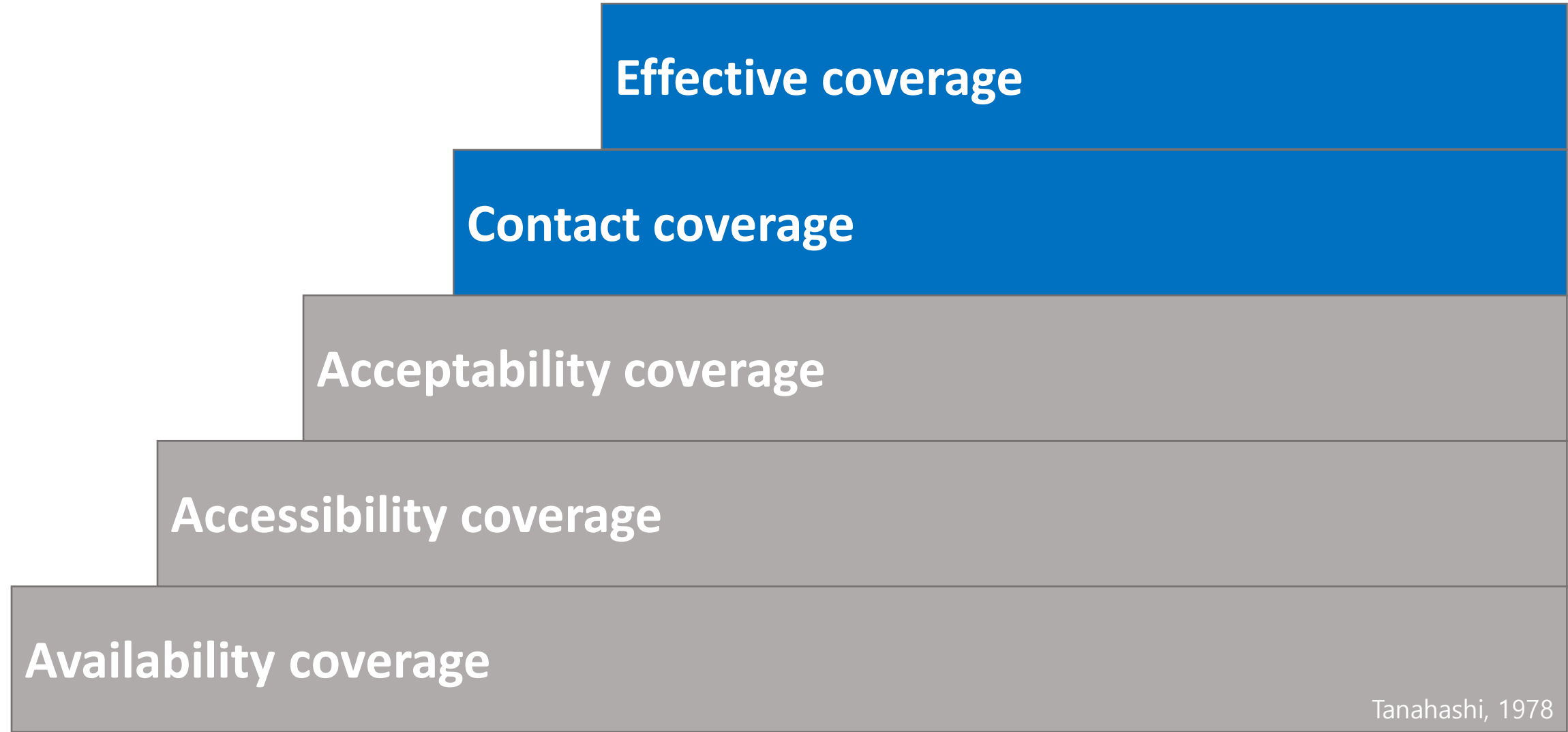
Sustainment (intervention)

- General measures – e.g., Provider Report of Sustainment Scale (PRESS)
- Intervention-specific measures
 - Binary (yes/no?)
 - Categorical (are you continuing elements of ____ intervention (check all that apply?))
 - Continuous - Has the intervention been delivered consistently?

Measurement – Special Considerations

- Time is a major factor
 - How long would you expect before interventions move from an implementation phase into a sustainment phase?
 - How long would you expect the intervention to be sustained?
 - How often do you suspect that significant changes in sustainment might occur?
- The interaction between adaptation and context as part of sustainment
 - Is it appropriate to adapt the intervention during implementation and/or sustainment?
 - If so, are you able to evaluate that?

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

People who used the service

Total population in need of service

Data

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

Data

Clinical outcome

+

People who received benefit

Program

Claims

Survey

Total population in need of service

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

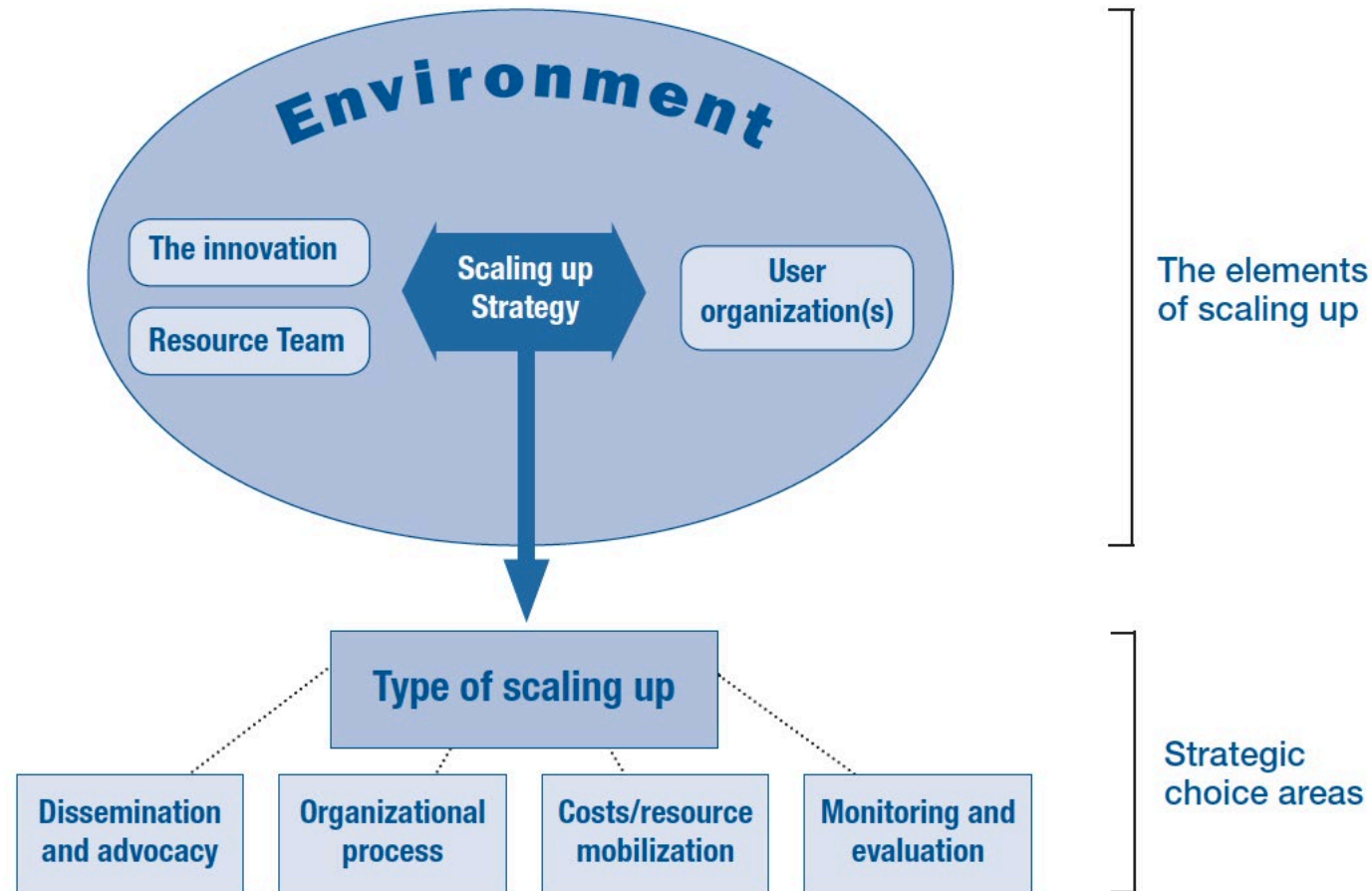
Literature

Analyze coverage rates by different groups

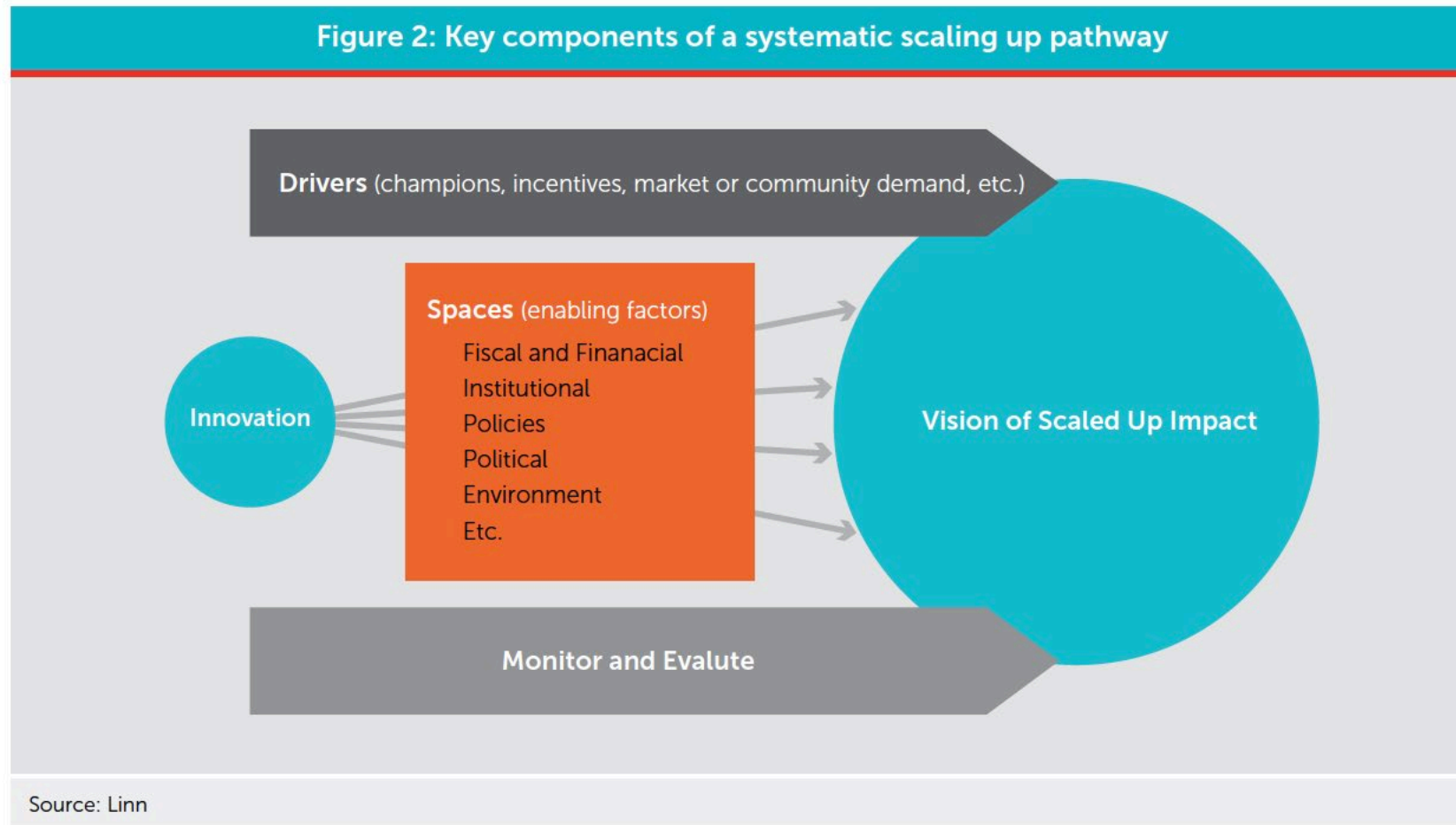
Unit of analysis

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

What drives scale-up?



What drives scale-up?



What drives scale-up?

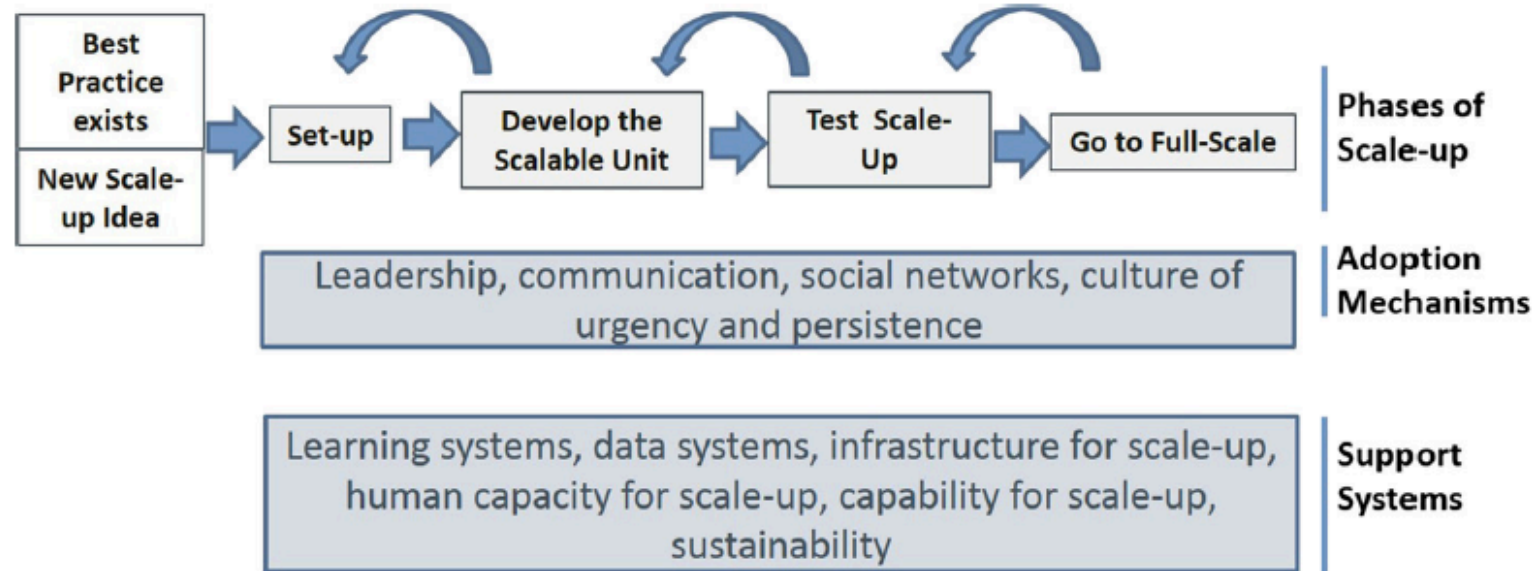
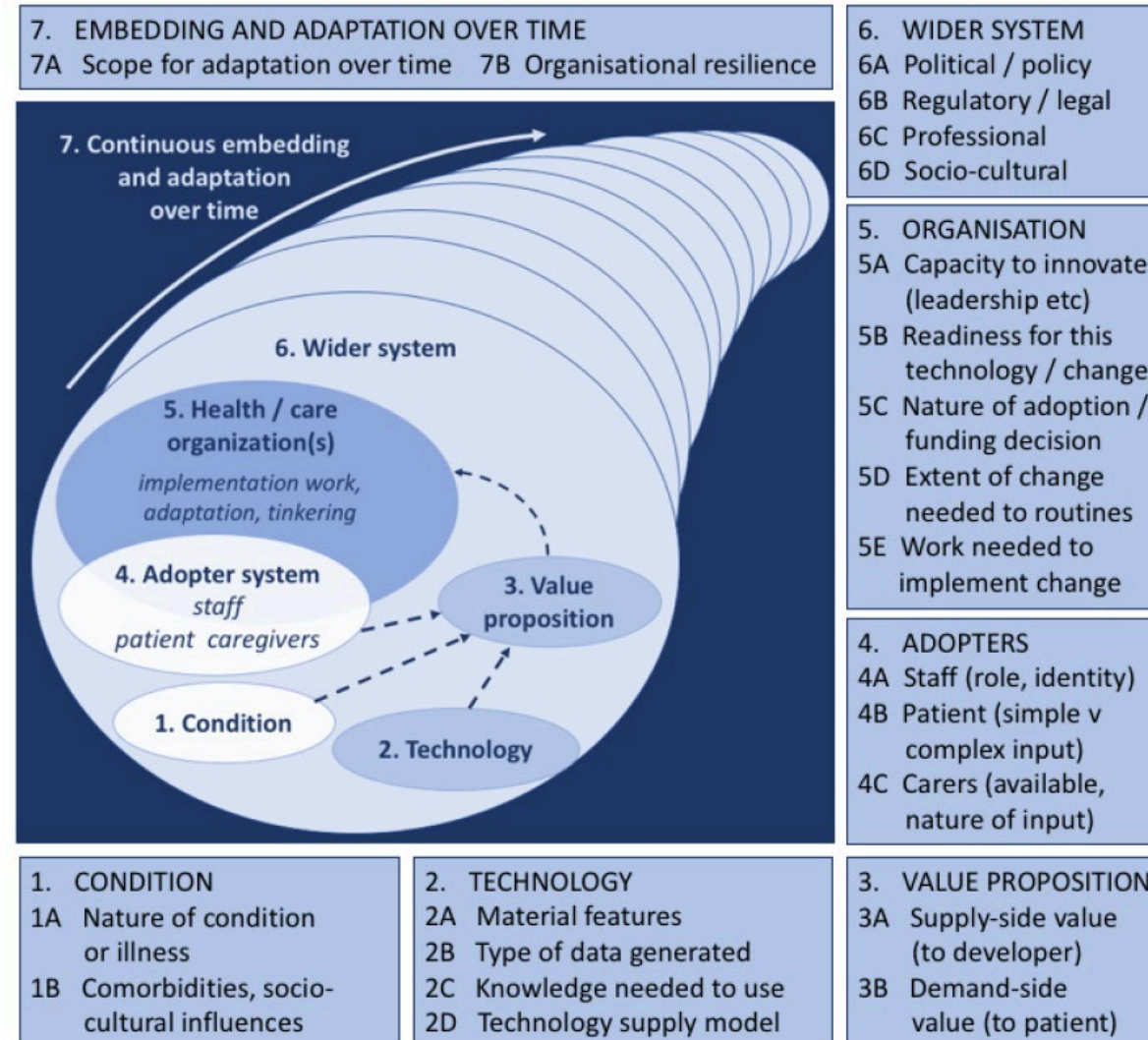
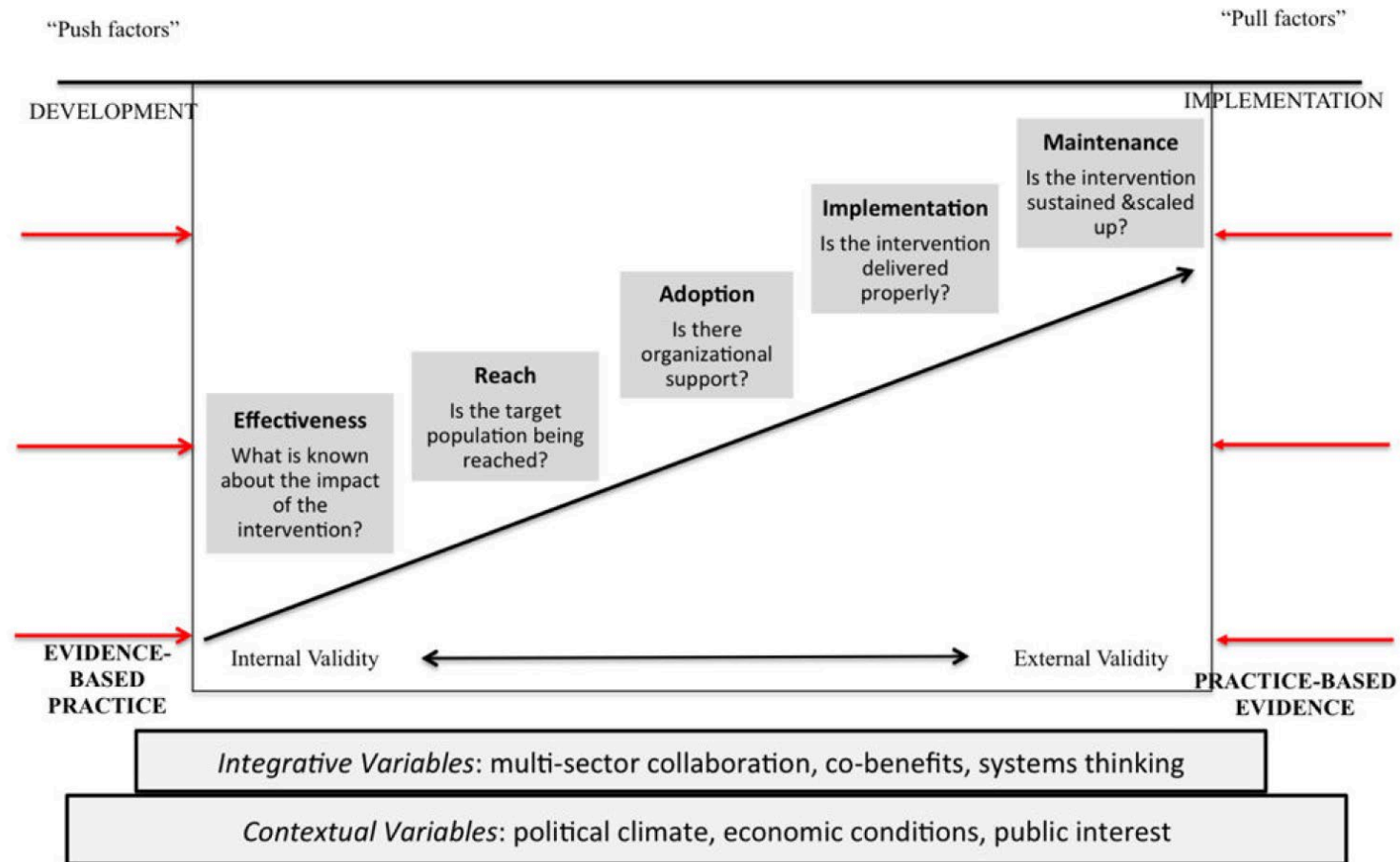


Fig. 3 IHI Framework for Going to Full Scale. The IHI Framework for Going to Full Scale addresses the phases of going to full scale and the adoption mechanisms and support systems needed to achieve large-scale programming. The elements of the framework include the phases of going to full scale (i.e., *Set-up*, *Develop the Scalable Unit*, *Test of Scale-up*, and *Go to Full Scale*); adoption mechanisms (i.e., leadership engagement, communication methods, leveraging social networks, and building a culture of urgency and persistence); and support systems needed to achieve large-scale programming (i.e., a learning system that connects adopters and experts, a data system to support measurement for improvement, infrastructure such as IT, equipment, etc.), building capability through training and support, and building reliable process that support sustainability

What drives scale-up?

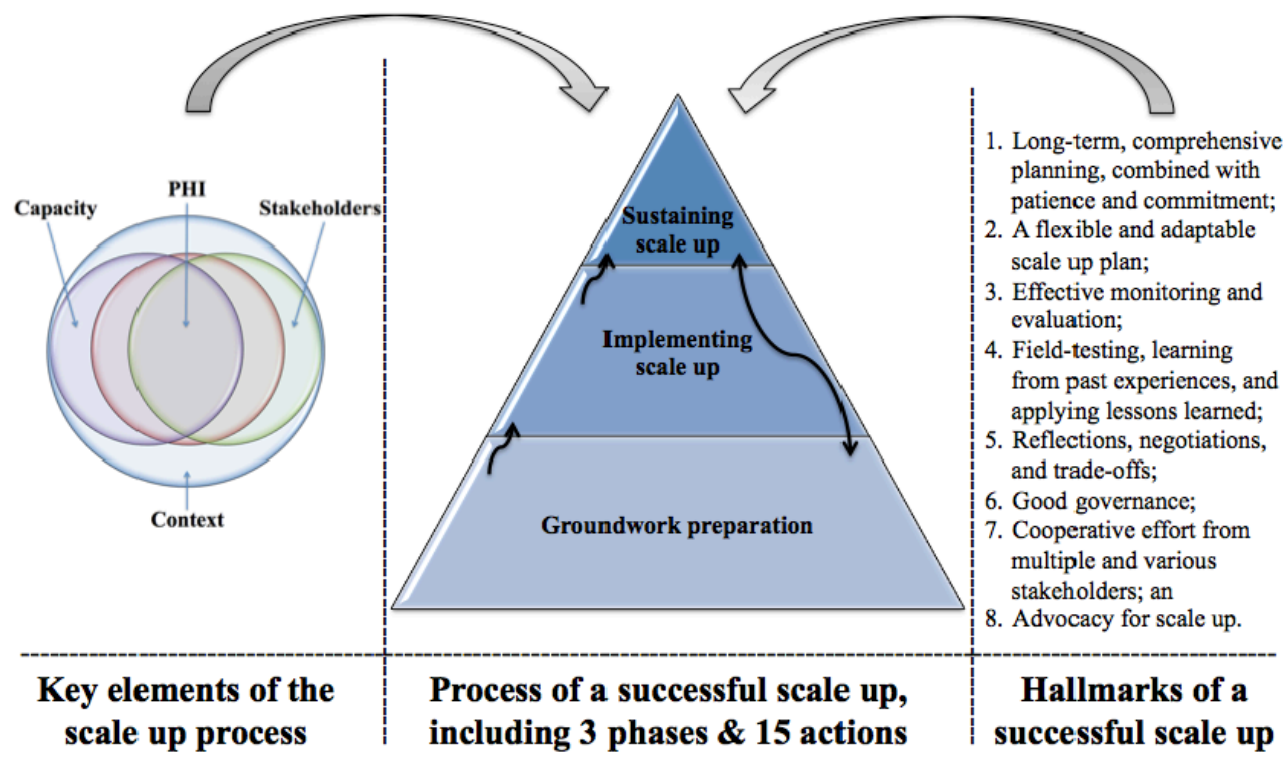


What drives scale-up?

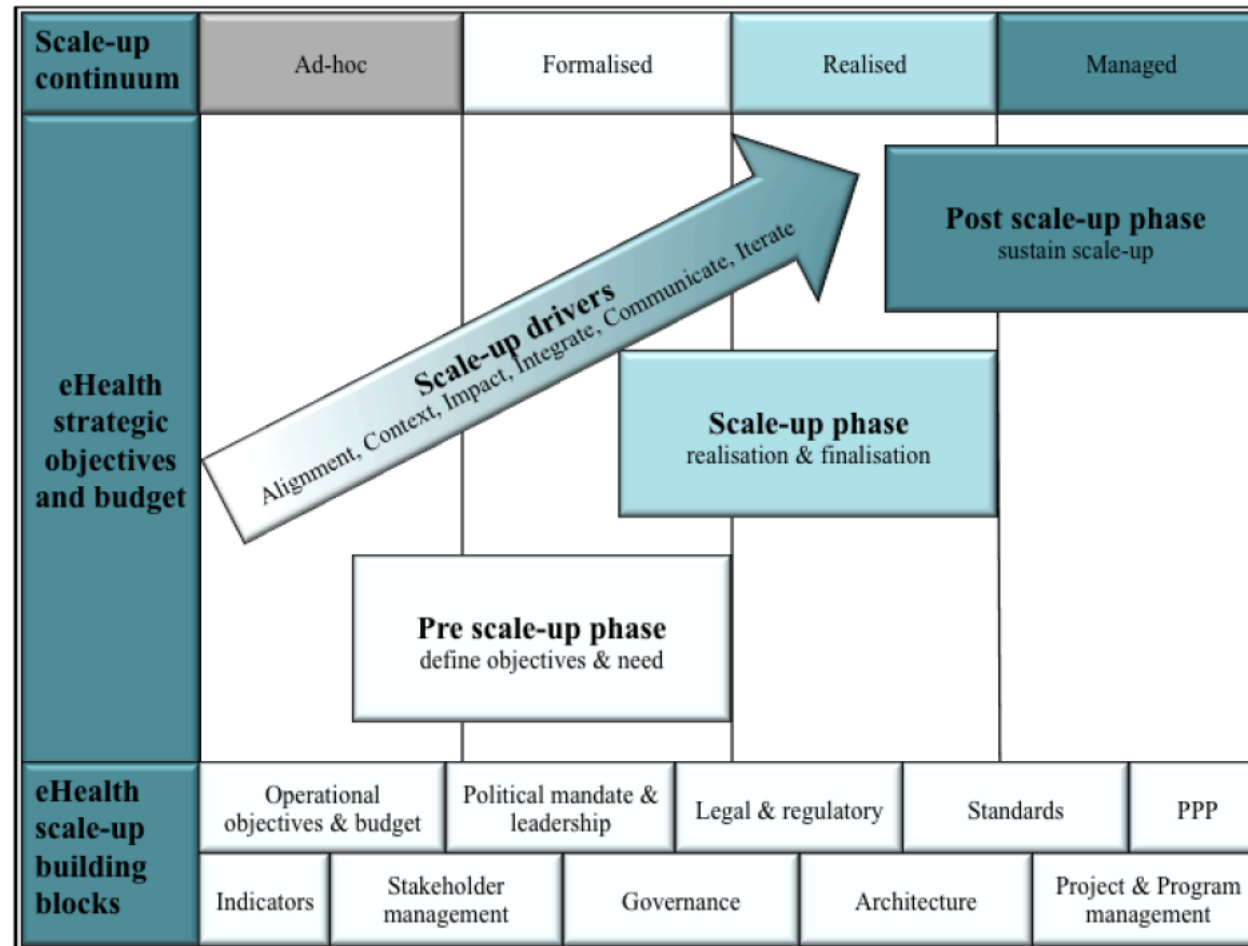


What drives scale-up?

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



What drives scale-up?



What drives scale-up?

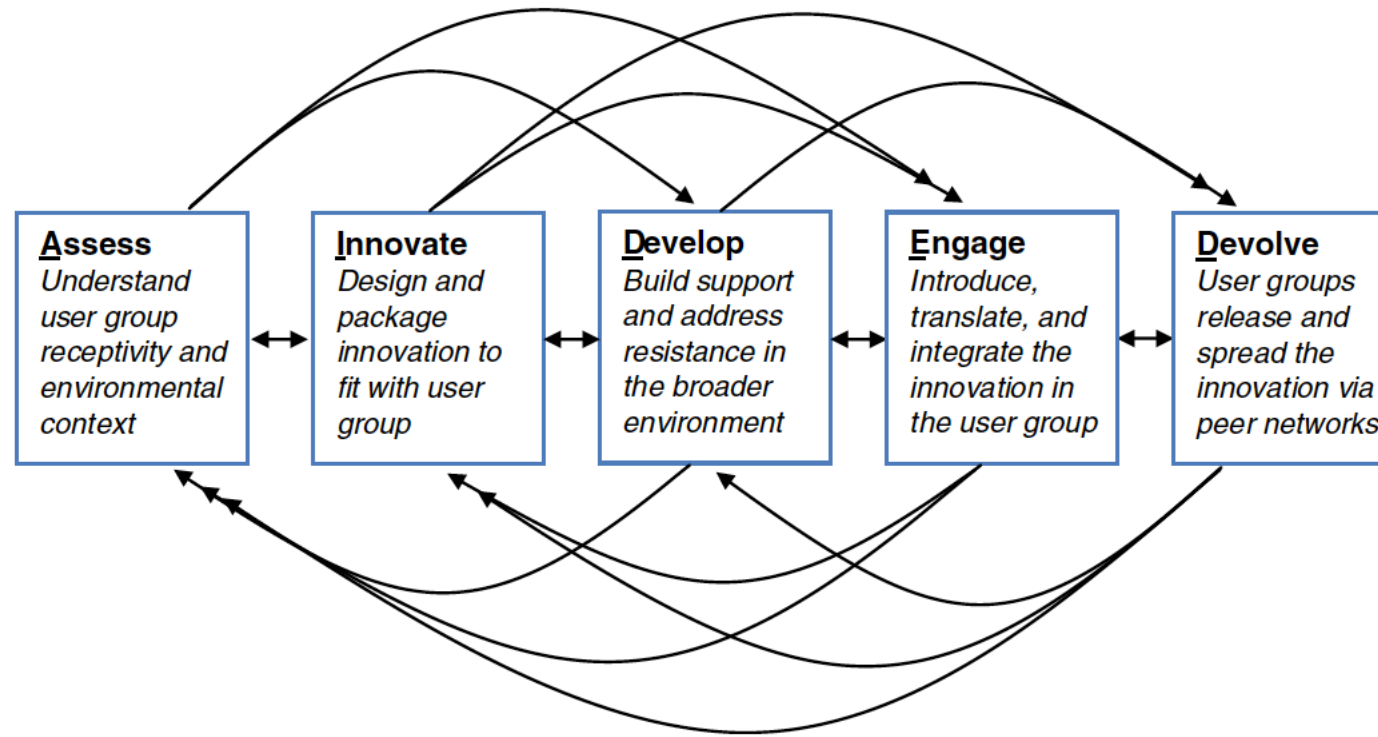
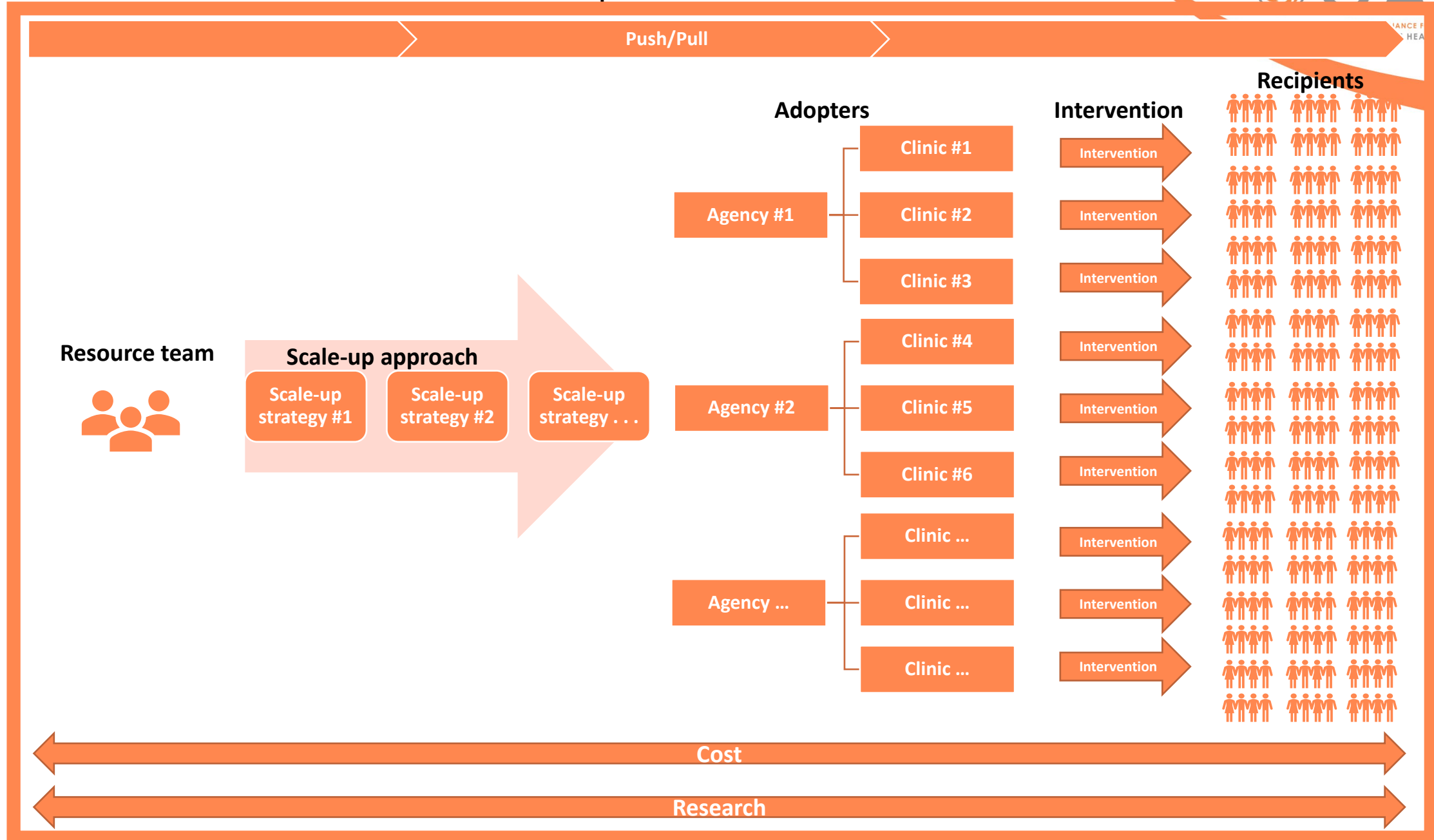


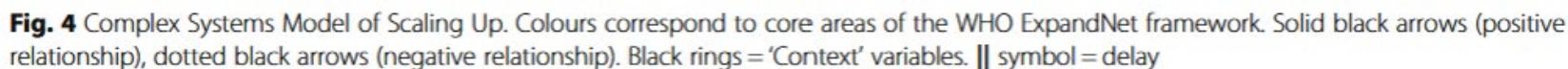
Figure 1 Schematic of the AIDED model for scaling up family health innovations. Legend: The figure presents the five non-linear, interrelated actions of the AIDED model: 1) assess the landscape, 2) innovate to fit user receptivity, 3) develop support, 4) engage user groups, and 5) devolve efforts for 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.

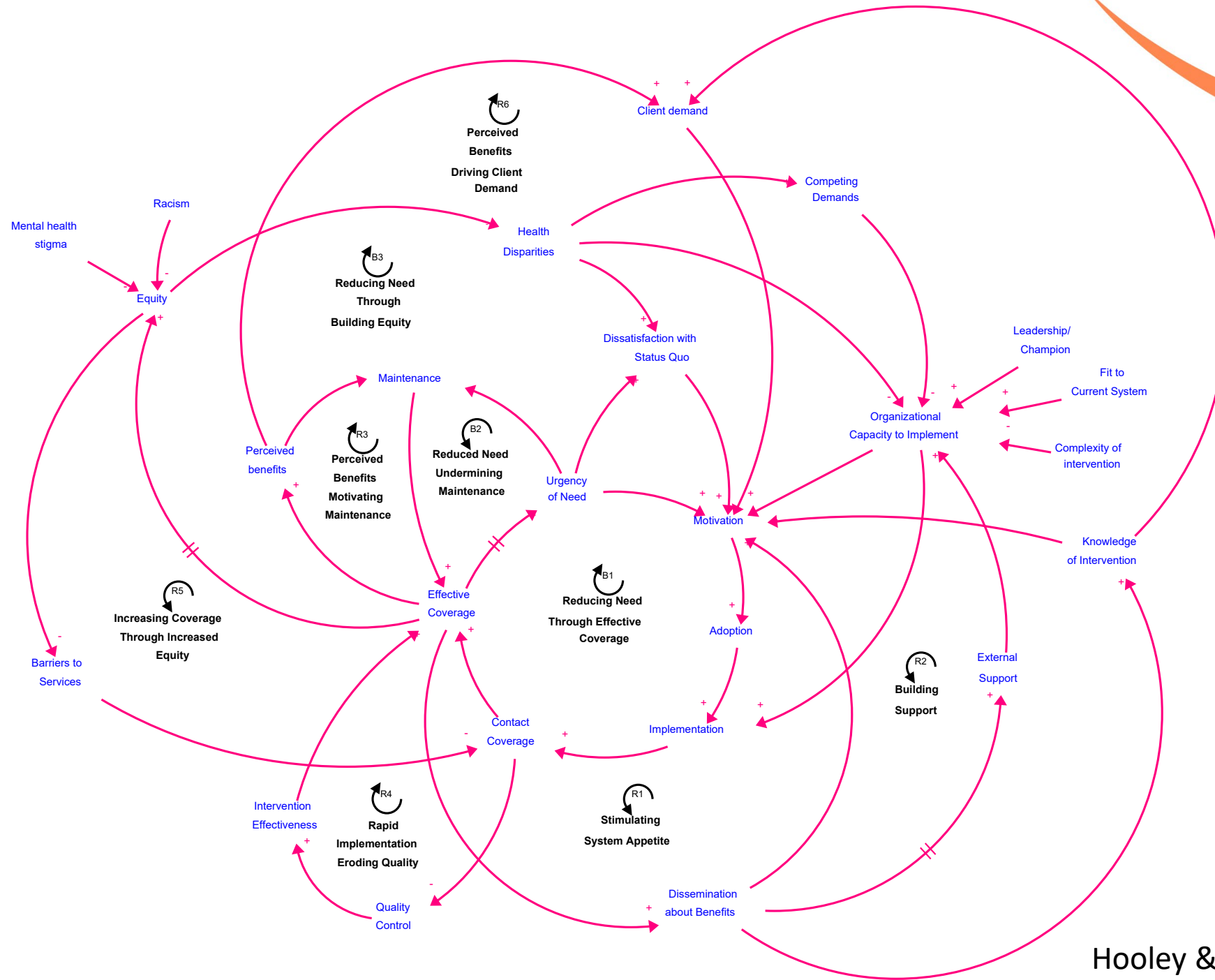
Sociopolitical context

Sociopolitical context

Sociopolitical context







What else should we be measuring?

Effective
Coverage

= Intervention + Resource team + Adopters + Recipients + Cost + Research
Sociopolitical context + Scale-up approach + Scale-up strategies + Push/pull

Key messages

1

Sustainment and scale up are implementation outcomes
Critical for impact

2

Multiple factors and implementation strategies
contribute to their attainment

3

Metrics for sustainment measurement—time is important!

4

Metrics for scale up measurement--denominator is important!

References

- Barker, P. M., Reid, A., & Schall, M. W. (2015). A framework for scaling up health interventions: Lessons from large-scale improvement initiatives in Africa. *Implementation Science*, 11(1), 12. <https://doi.org/10.1186/s13012-016-0374-x>
- Birken, S. A., Haines, E. R., Hwang, S., Chambers, D. A., Bunger, A. C., & Nilsen, P. (2020). Advancing understanding and identifying strategies for sustaining evidence-based practices: a review of reviews. *Implementation Science*, 15, 1-13.
- Boell, S., & Cecez-Kecmanovic, D. (2014). A hermeneutic approach for conducting literature reviews and literature searches. *Communications of the Association for Information Systems*, 34(1), 257–286. <https://doi.org/10.17705/1CAIS.03412>
- CGIAR, & Global Forum for Agricultural Research. (2000). *Going to scale: Can we bring more benefits to more people more quickly?*
- Chambers, D. A., Glasgow, R. E., & Stange, K. C. (2013). The dynamic sustainability framework: addressing the paradox of sustainment amid ongoing change. *Implementation science*, 8, 1-11.
- Cilliers, P. (2013). Understanding complex systems. In *Handbook of systems and complexity in health* (pp. 27–38). Springer New York.
- Collins, P. Y., Patel, V., Joestl, S. S., March, D., Insel, T. R., Daar, A. S., Bordin, I. A., Costello, E. J., Durkin, M., Fairburn, C., Glass, R. I., Hall, W., Huang, Y., Hyman, S. E., Jamison, K., Kaaya, S., Kapur, S., Kleinman, A., Ogunniyi, A., ... Walport, M. (2011). Grand challenges in global mental health. *Nature*, 475(7354), 27–30. <https://doi.org/10.1038/475027a>
- Cooley, L., & Linn, J. F. (2014). *Taking innovations to scale: Methods, applications and lessons* (p. 24). Results for Development Institute.
- Curry, L., Taylor, L., Pallas, S. W., Cherlin, E., Pérez-Escamilla, R., & Bradley, E. H. (2013). Scaling up depot medroxyprogesterone acetate (DMPA): A systematic literature review illustrating the AIDED model. *Reproductive Health*, 10, 39. <https://doi.org/10.1186/1742-4755-10-39>
- Department of Health. (2012). *IAPT three-year report – The first million patients* (p. 1-48)
- De Silva, M. J., Lee, L., Fuhr, D. C., Rathod, S., Chisholm, D., Schellenberg, J., & Patel, V. (2014). Estimating the coverage of mental health programmes: A systematic review. *International Journal of Epidemiology*, 43(2), 341–353. <https://doi.org/10.1093/ije/dyt191>
- Greenhalgh, T., Wherton, J., Papoutsis, C., Lynch, J., Hughes, G., A’Court, C., Hinder, S., Fahy, N., Procter, R., & Shaw, S. (2017). Beyond adoption: A new framework for theorizing and evaluating nonadoption, abandonment, and challenges to the scale-up, spread, and sustainability of health and care technologies. *Journal of Medical Internet Research*, 19(11), e367. <https://doi.org/10.2196/jmir.8775>
- Hall, A., Shoesmith, A., Doherty, E., McEvoy, B., Mettert, K., Lewis, C. C., ... & Nathan, N. (2022). Evaluation of measures of sustainability and sustainability determinants for use in community, public health, and clinical settings: a systematic review. *Implementation Science*, 17(1), 81.
- Hooley, C. & Marcal, K. (in preparation). *Unifying scale-up frameworks: A review and systems thinking model*
- Hooley, C., Weatherly, C., & Proctor, E. K. (2018). *Expanding the reach of mental healthcare: An analysis of key scale-up frameworks*. Association for Behavioral and Cognitive Therapies Annual Convention, Washington, DC.

References

- Hooley, C., Salvo, D., Brown, D. S., Brookman-Frazee, L., Lau, A. S., Brownson, R. C., Fowler, P. J., Innes-Gomberg, D., & Proctor, E. K. (2022). Scaling-up child and youth mental health services: Assessing coverage of a county-wide prevention and early intervention initiative during one fiscal year. *Administration and Policy in Mental Health and Mental Health Services Research*. <https://doi.org/10.1007/s10488-022-01220-3>
- Koorts, H., Cassar, S., Salmon, J., Lawrence, M., Salmon, P., & Dorling, H. (2021). Mechanisms of scaling up: Combining a realist perspective and systems analysis to understand successfully scaled interventions. *International Journal of Behavioral Nutrition and Physical Activity*, 18(1), 42. <https://doi.org/10.1186/s12966-021-01103-0>
- Krasnik, A. (1996). The concept of equity in health services research. *Scandinavian Journal of Social Medicine*, 24(1), 2–7. <https://doi.org/10.1177/140349489602400102>
- Lancet Global Mental Health Group. (2007). Scale up services for mental disorders: A call for action. *The Lancet*, 370(9594), 1241–1252. [https://doi.org/10.1016/S0140-6736\(07\)61242-2](https://doi.org/10.1016/S0140-6736(07)61242-2)
- National Institute of Mental Health. (2016). *PAR-16-174: Research partnerships for scaling up mental health interventions in Low-and Middle-Income Countries (U19)*. <https://grants.nih.gov/grants/guide/pa-files/PAR-16-174.html>
- Nguyen, D. T. K. (2016). *Scaling up [to] a population health intervention: A readiness assessment framework*. University of Calgary.
- Pilar, M., Elwy, A.R., Lushniak, L., Huang, G., McLoughlin, G. M., Hooley, C., Geng, E. H., & Proctor, E. (In press). A perspective on implementation outcomes and strategies to promote the uptake of COVID-19 vaccines. *Frontiers in Health Services*.
- Plsek, P. E., & Greenhalgh, T. (2001). The challenge of complexity in health care. *BMJ*, 323(7313), 625. <http://dx.doi.org/10.1136/bmj.323.7313.625>
- Reis, R. S., Salvo, D., Ogilvie, D., Lambert, E. V., Goenka, S., & Brownson, R. C. (2016). Scaling up physical activity interventions worldwide: Stepping up to larger and smarter approaches to get people moving. *The Lancet*, 388(10051), 1337–1348. [https://doi.org/10.1016/S0140-6736\(16\)30728-0](https://doi.org/10.1016/S0140-6736(16)30728-0)
- Sarkies, M., Long, J. C., Pomare, C., Wu, W., Clay-Williams, R., Nguyen, H. M., Francis-Auton, E., Westbrook, J., Levesque, J.-F., Watson, D. E., & Braithwaite, J. (2020). Avoiding unnecessary hospitalisation for patients with chronic conditions: A systematic review of implementation determinants for hospital avoidance programmes. *Implementation Science*, 15(1), 91. <https://doi.org/10.1186/s13012-020-01049-0>
- Shelton, R. C., Cooper, B. R., & Stirman, S. W. (2018). The sustainability of evidence-based interventions and practices in public health and health care. *Annual review of public health*, 39(1), 55-76.
- Singla, D. R., Raviola, G., & Patel, V. (2018). Scaling up psychological treatments for common mental disorders: A call to action. *World Psychiatry*, 17(2), 226–227. <https://doi.org/10.1002/wps.20532>
- Substance Abuse and Mental Health Services Administration. (2020). *Key substance use and mental health indicators in the United States: Results from the 2019 National Survey on Drug Use and Health* (No. PEP20-0701–001, NSDUH Series H-55; p. 114). Center for Behavioral Health Statistics and Quality, Substance Abuse and Mental Health Services Administration.
- Sturmberg, J. P., & Martin, C. (Eds.). (2013). *Handbook of systems and complexity in health*. Springer New York. <http://ebookcentral.proquest.com/lib/byu/detail.action?docID=1081866>
- Tanahashi, T. (1978). Health service coverage and its evaluation. *Bulletin of the World Health Organization*, 56(2), 295–303.
- Walters, L. E. M., Scott, R. E., & Mars, M. (2018). A teledermatology scale-up framework and roadmap for sustainable scaling: Evidence-based development. *Journal of Medical Internet Research*, 20(6), e9940. <https://doi.org/10.2196/jmir.9940>
- Whitehead, M. (1992). The concepts and principles of equity and health. *International Journal of Health Services*, 22(3), 429–445. <https://doi.org/10.2190/986L-LHQ6-2VTE-YRRN>
- World Health Organization. (2010). *Nine steps for developing a scaling-up strategy*. <https://expandnet.net/PDFs/ExpandNet-WHO%20Nine%20Step%20Guide%20published.pdf>