A Systems Approach to Scale-up for Population Health Improvement

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Presentation summary

Despite many important global public health successes, for many public health problems there is a continued lack of interventions that have been sufficiently scaled up to achieve sustainable and equitable population health improvement. Implementation science approaches have dominated the scale up literature, which typically promote a sequential and mechanistic spread of interventions. Systems change plays a major role in the relation between implementation processes and institutionalization of public health interventions; yet systems approaches remain underutilized in scaling up. This presentation will present evidence from scaled up physical activity and nutrition interventions, to illustrate why reorientating the scale-up discourse to embrace a complex systems perspective has the potential to improve sustainable implementation and impact of population interventions.

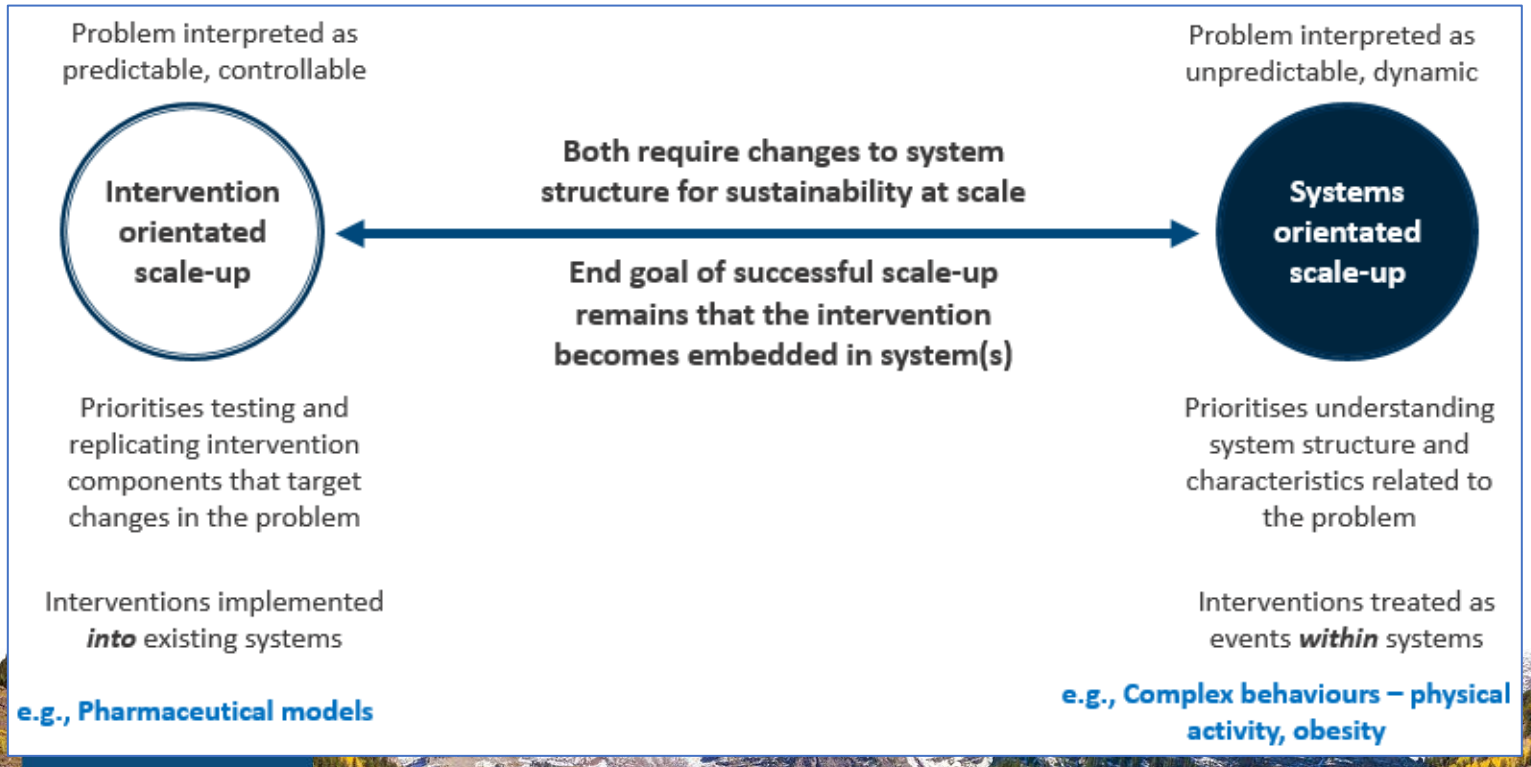
A systems approach to scale-up:

*"an approach that prioritises the **behaviour and function of the system**, with a focus on **relations between a number of system elements**, using system-level levers and **dynamic system changes** to drive impact at scale"* Koorts & Rutter (2021)

An intervention-orientated approach to scale-up:

"*an approach that aims to **widen intervention reach** into existing systems and adheres to a predefined protocol for **linear expansion and replication** in other settings, which can involve scaling any number of elements to reproduce intervention effects*" Koorts & Rutter (2021)

The scale-up spectrum:



Thought questions:

1. How might I apply this to my work?
2. What partners might I engage?
3. What systems might I use?

Recommended reading: An integrated research-practice partnership in Australia

- Wolfenden L, Yoong SL, Williams CM, et al. Embedding researchers in health service organizations improves research translation and health service performance: the Australian Hunter New England Population Health example. *Journal of Clinical Epidemiology.* 2017;85:3-11.

Practical application of a systems approach to scale-up: Denver Health

- A transformation initiative at Denver Health - a large, integrated, urban, safety-net system
- A ''radical redesign project,'' aiming at ''improved patient safety and satisfaction, efficiencies and cost reductions, and job satisfaction''
- The system-wide implementation project identified **health system capacity** for innovation as a **key systems-level driver** for sustainable intervention implementation.

Alignment with a systems approach to scale-up definition[1]	Denver Health redesign[2]
The '**system's behavior and function**'	A core focus of the Denver Health system redesign was on the antecedent capacities of the health system (i.e., organizational capacity for implementing change, service capacity for infrastructure expansion)
The '**relations between system elements**'	Understanding previous system behaviours and activities (i.e., historical outcomes of system changes led to a reduction in resistance by stakeholders)
Understanding how '**dynamic system changes affect intervention expansion, embeddedness and impact**'	Embedding project and system performance metrics enabled tracking of system wide outcomes. This provided feedback to inform modifications to ongoing implementation.

Source: [1]Koorts, H. & Rutter, H. A systems approach to scale-up for population health improvement, *Health Research Policy and Systems* 2021; 19:27. [2]Harrison MI, Kimani J. Building capacity for a transformation initiative: system redesign at Denver Health. *Health Care Manage Rev*. 2009;34(1):42–53.

Additional resources

- **Pfotenhauer et al.** (2021) The politics of scaling
- **Zamboni et al.** (2019) Assessing scalability of an intervention: why, how and who?
- **Bulthuis et al.** (2019) Factors influencing the scale-up of public health interventions in low- and middle-income countries: a qualitative systematic literature review
- **Paina et al.** (2012) Understanding pathways for scaling up health services through the lens of complex adaptive systems
- **Woltering et al.** (2019) Scaling – from "reaching many" to sustainable systems change at scale: A critical shift in mindset
- **Milat et al.** (2020) Intervention Scalability Assessment Tool: A decision support tool for health policy makers and implementers
- **Lane et al.** (2021) How effective are physical activity interventions when they are scaled-up: a systematic review
- **Zomahoun et al.** (2019) The pitfalls of scaling up evidence-based interventions in health

Thinking in systems: Characterising parameters of the implementation setting using the PRACTIS Guide (Source: Koorts et al. IJBNPA.15(1), 51. 2018)

PRACTIS Guide is:

- Used to develop partnerships with systems that will ultimately apply research findings within practice
- Draws on existing models and frameworks to address *how* to plan for implementation and scale-up during intervention development, testing and ongoing adaptation
- Aimed at those with **varying levels of implementation experience and expertise**
- **Four step process that are not mutually exclusive.** The process is iterative and will reflect learnings from implementation efforts. Steps may occur sequentially, include overlapping activities and/or in a different order

The purpose of *Step 1* is to predict and describe features of the potential implementation setting, pinpointing gaps in the planning process.

Activity: Complete the checklist questions below in your teams – Are there gaps? What are they? Can they be resolved, monitored or impact measured?

Table 1 Checklist considerations when characterizing implementation setting parameters (Step 1)

Level	Characteristics	Process of intervention adoption and delivery	Sustainability
Intervention population (Individual level)	1. Who will access the intervention? What is the size of the target population? Are there participation eligibility criteria (i.e. age)? Are there subgroups that experience disparities in physical activity?	2. How will the target population access/be recruited into the intervention? What will motivate or incentivize them to take part? How will you ensure equity of access for disadvantaged subgroups?	3. How will retention be supported and monitored? How will you ensure those who may be at higher risk of attrition will be retained and how will this be monitored?
Implementers (Provider level)	4. Who will deliver the intervention? How many implementers will be required? Are there eligibility criteria to deliver the intervention (i.e. level of skill, knowledge, education)?	5. How will implementers be identified/engaged and trained? What will motivate or incentivize them to implement the intervention? How will you facilitate engagement with disadvantaged groups?	6. How will implementers be supported (i.e. ongoing training, performance feedback, champions) to sustain intervention fidelity and delivery? How will you prepare for sustainability in lower-resourced settings?
Delivery setting/org. (Organizational level)	7. What is the target delivery setting(s) (i.e. setting, size) and are there eligibility criteria for adoption (i.e. possess certain resources)? How will you engage settings that provide services to disadvantaged subgroups?	8. How will target delivery settings be identified and be made aware of the intervention? What will motivate or incentivize the setting to adopt and implement the intervention?	9. Who will take ownership of the intervention and how will adoption, delivery, impact, and sustainability be monitored? How will start-up and ongoing costs be considered when planning for sustainability and implementation at scale?
Environment/ context (Community/ systems level)	10. What are the key characteristics of the target community (i.e. built environment infrastructure, low-high income)? How will you engage communities with disadvantaged subgroups?	11. How will characteristics of the community (i.e. funding and political climate, readiness for implementation) influence dissemination, implementation and scale-up? How will community accountability for implementation be generated and assessed?	12. Who at the community/systems level will be responsible for the intervention? Are there individual or organizational champions for intervention implementation that could help to plan for sustainability?
Intervention factors: (All levels)	13. What is the intervention design (i.e. strategies, underlying principles, delivery format, duration, resources required)? What are the core and adaptable elements (i.e. flexibility)? Which elements may/may not be scalable? How simple/complex is the design and what relative advantage does the intervention provide?	14. How will the intervention and plans for implementation, be developed so they align with organizational missions, values and infrastructure (i.e. size, resource availability)? How will the intervention integrate into existing individual and organizational practices (i.e. setting compatibility)?	15. How will the intervention and associated costs and resources for delivery (i.e. materials) be sustainably funded? How will intervention implementation processes (i.e. setting/staff training) be integrated into organizational policies and job descriptions? How will implementation capacity be developed and sustained at scale?

(Source: Koorts et al. IJBNPA.15(1), 51. 2018)