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# Feasibility of Scaling-up Interventions: The Role of Intervention Design

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# PREVIEW

- Why develop a framework for intervention complexity?
- The conceptual framework
- Application of the framework: Trachoma surgery
- Potential usefulness of the framework
- Conclusions

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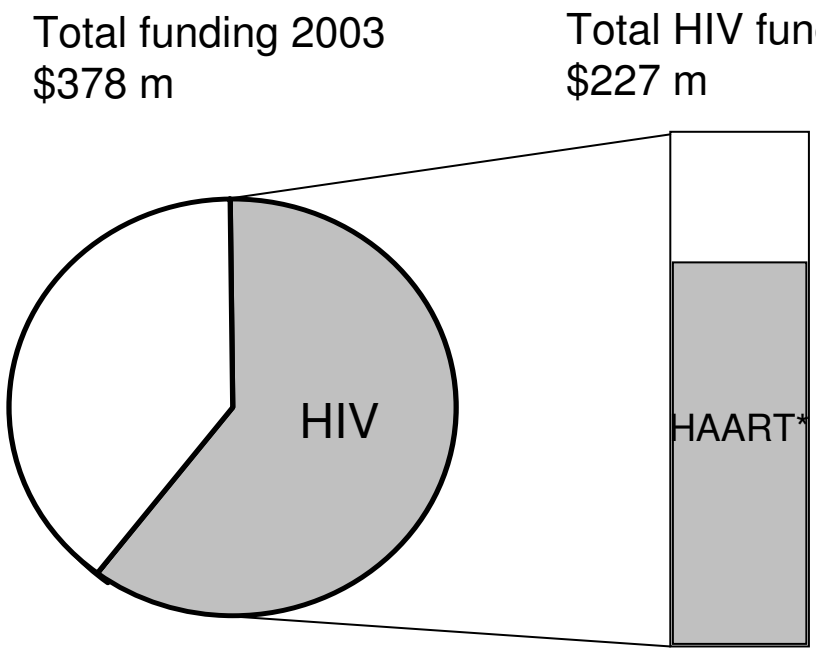
# WHY DEVELOP A FRAMEWORK FOR INTERVENTION COMPLEXITY?

- **To understand the role of intervention design in expanding access**
  - Is intervention complexity a useful criterion to complement burden of disease, cost-effectiveness, and affordability considerations?
- **To indicate R&D priorities for simplifying interventions**
  - Are there particular interventions that are easy to scale up?
  - How can existing interventions be simplified to relax constraints?
- **To guide decisions on how to implement interventions in a specific setting**
  - Which characteristics of an intervention can we change to implement it here?

# INTERVENTION COMPLEXITY AND SCALING-UP: THE GLOBAL FUND EXAMPLE




- $170 m or 45%* of total funding are used for HAART purchases from pharmaceutical industry
- HAART is difficult to use, requires extensive infrastructure & human resources
- HAART is unlikely to be pro-poor: Socially advantaged groups having access to specialist care will benefit most
- In Thailand, HAART purchases led to decreased HIV prevention budgets and increased infection rates

*Assuming an equal share of resources allocated per country
Source: Potts & Walsh, BMJ 2003;326:1389

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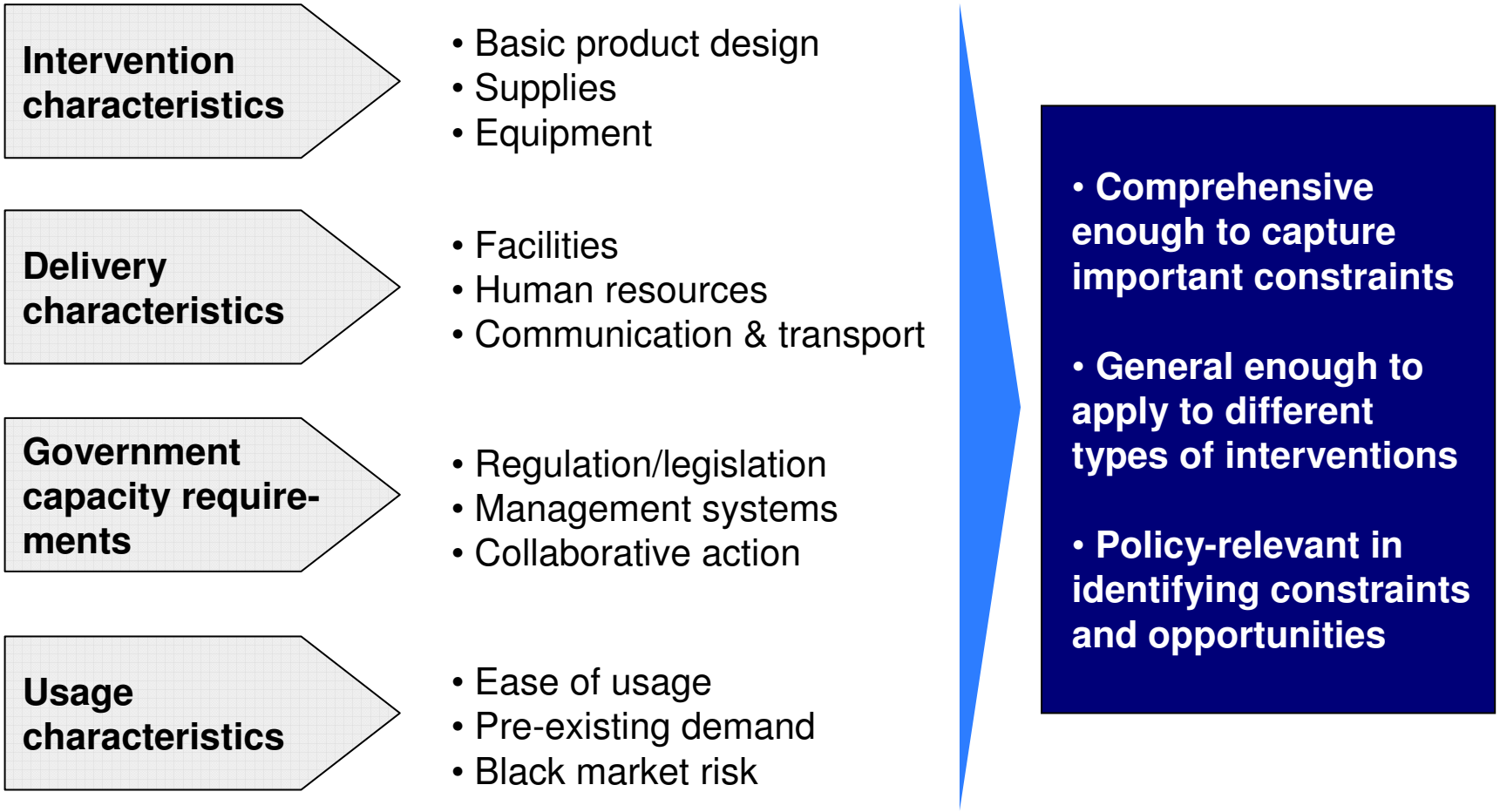
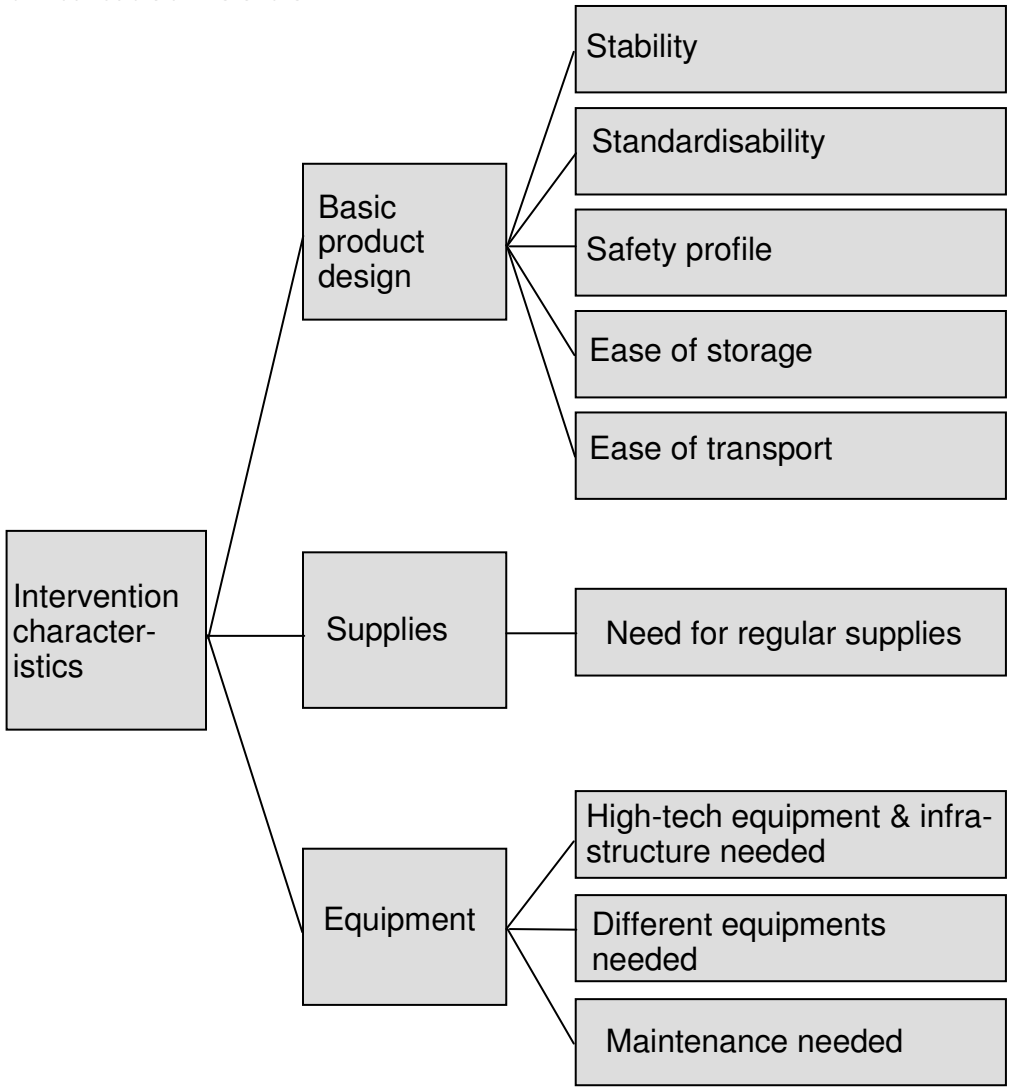
# CONCEPTUAL FRAMEWORK FOR CATEGORISING INTERVENTIONS BY THEIR DEGREE OF COMPLEXITY



# CONCEPTUAL FRAMEWORK: THIRD LEVEL CRITERIA

Intervention characteristics



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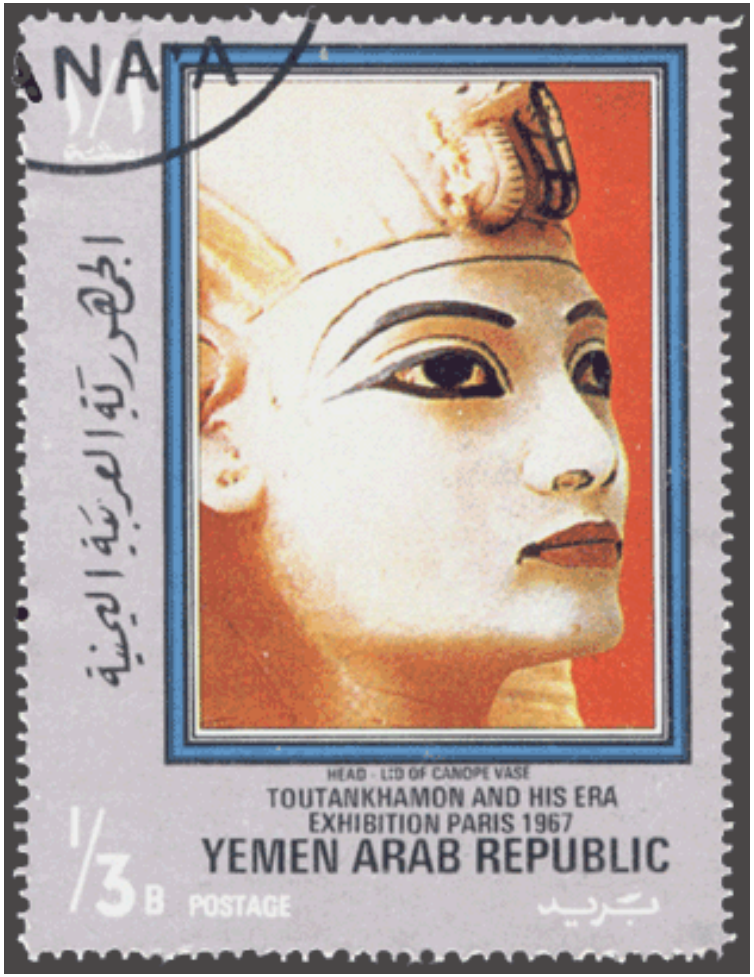
# TRACHOMA PREVENTION/TREATMENT 4000 B.C. WITH EYE SHADOW




Source: www.mrcophth.com

# TRACHOMA IS STILL WORLD'S LEADING CAUSE OF PREVENTABLE BLINDNESS

## Epidemiology and pathophysiology

- 6 million people are blind due to trachoma - 15% of world blindness.
- Trachoma is endemic in dry, rural areas of poorest countries.
- Repeated infection leads to inflammation, lid scarring and shortening, in-turning of eyelashes (trichiasis), that rub on the cornea and cause blindness.

## WHO *SAFE* Strategy (1997)

- Surgery, Antibiotics, Facial cleanliness, Environmental improvement.

## Trachoma surgery

- Top priority of SAFE strategy as it prevents imminent blindness.
- Standard procedure (bilamellar tarsal rotation) has 80% success rate.
- Ophthalmic nurses can safely perform the procedure in communities.

# 1. INTERVENTION CHARACTERISTICS: TRACHOMA SURGERY

**Basic Product Design**

• Manuals can standardise operation to certain extent. Some variation will persist, as training of operators and equipment will vary.

• Surgical procedures are relatively simple. Good safety profile. Trichiasis recurrence in 20%.

• Storage is no problem. Equipment needed can be carried by the nurse on a motorcycle.

**Supplies**

• Need for regular supplies with standard surgical material.

**Equipment**

• Only basic equipment for extra-ocular surgery needed.

• Sterilisation of equipment is only maintenance needed - can pose logistical problems for community-based programs.

# 2. DELIVERY CHARACTERISTICS: TRACHOMA SURGERY

**Facilities**

• Surgery can be provided by outreach services in communities or at first level care centres.

**Human Resources**

• Minimum requirement: ophthalmic nurses (1 year ophthalmic training), who can learn the procedure in two weeks.

**Communications & Transport**

• Low dependency of delivery on communication and transport infrastructure. Access with motorcycle is sufficient.

# 3. GOVERNMENT CAPACITY REQUIREMENTS: TRACHOMA SURGERY

**Regulation/ Legislation**

- No need for specific regulation.

**Management Systems**

- No need for sophisticated management systems.

**Collaborative Action**

- No need for intersectoral action within government.
- In many settings, need for partnership between government and NGOs who employ and train ophthalmic nurses or assistants, or send expatriate ophthalmic surgeons.
- Coordination between government sector, NGOs, and donors required.

# 4. USAGE CHARACTERISTICS: TRACHOMA SURGERY

**Ease of Usage**

- Not applicable.

**Pre-existing Demand**

- Substantial need for information/education campaigns on benefits and safety profile of surgery, as acceptance rates are a particular problem with trachoma surgery. Uptake rates as low as 18% (Tanzania) and 35% (Malawi) in affected communities have been reported.

**Black Market Risk**

- None.

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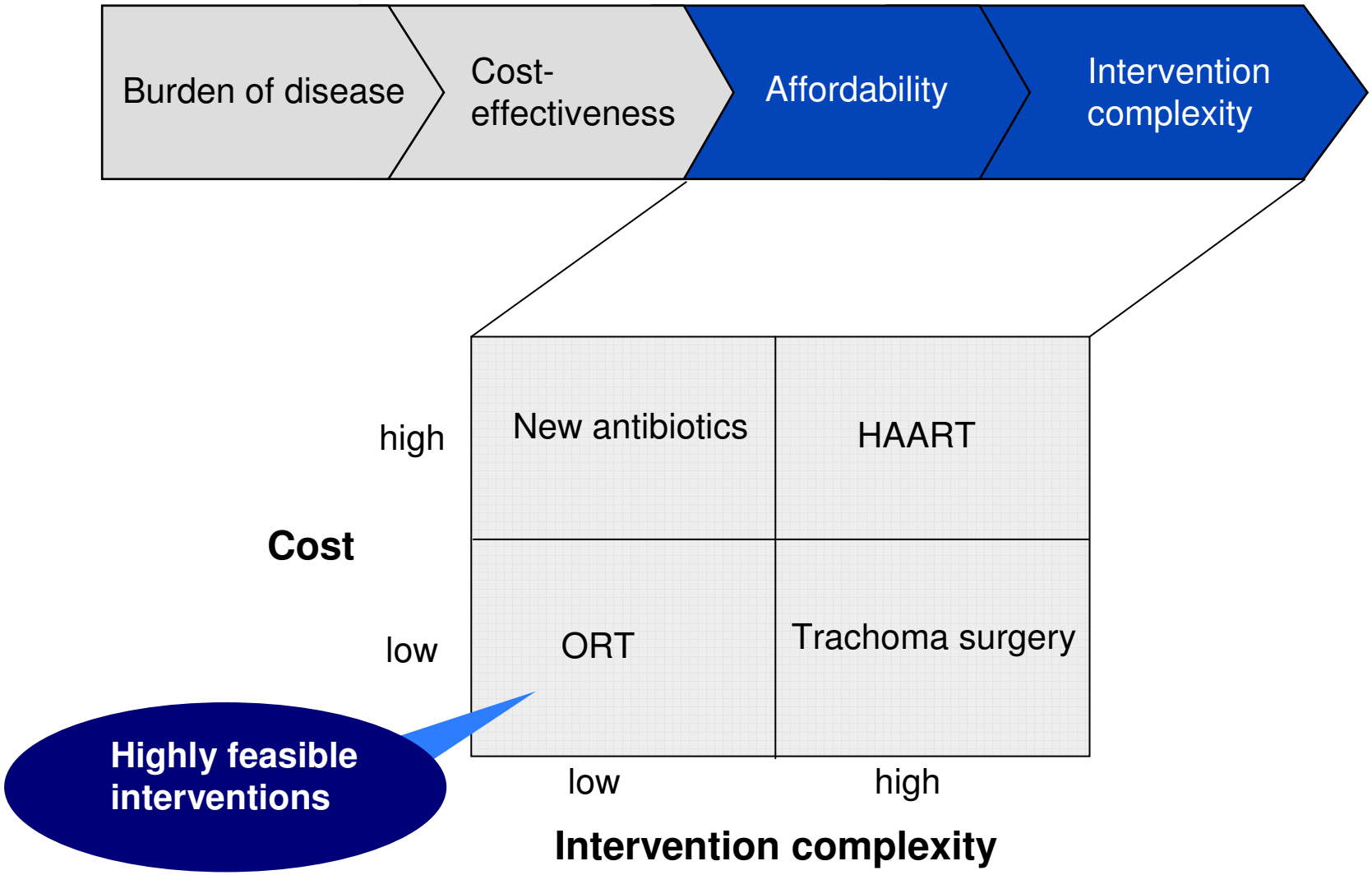
# INTERVENTION COMPLEXITY CAN COMPLEMENT OTHER CRITERIA FOR PRIORITY SETTING



# INTERVENTION COMPLEXITY ANALYSIS CAN HELP IDENTIFY POTENTIAL FOR SIMPLIFICATION: TRACHOMA SURGERY EXAMPLE

Innovative treatment with sticking-plasters relaxes human resources and usage constraints of trachoma surgery

**Intervention characteristics**

- Sticking-plasters with glue on both sides and standard surgical tape replaced weekly for 3 months. Adherence to regimen was 100% in RCT (Graz et al. 1999).
- No other supplies or equipment needed

**Delivery characteristics**

- Home-based delivery through 1° health staff, community health workers, traditional eye-lash pickers, or relatives

**Government capacity**

- No special requirements on government capacity

**Usage characteristics**

- Easy to use, immediate relief of discomfort
- Circumvenes main reason for low uptake of surgery - fear of the operation.

# NON-CONVENTIONAL WAYS TO SCALE-UP INTERVENTIONS IDENTIFIED IN LITERATURE REVIEW

## Simplified technology

- Medical abortion replacing surgical abortion
- Long-lasting insecticide treated nets

## Different delivery/distribution channels

- Social marketing for condoms or insecticide-treated nets
- Use of NGOs where government capacity is weak

## Pushing down human resources requirements

- Midwifery training of traditional birth attendants
- Sticking-plaster treatment replacing trachoma surgery

## Simplified usage

- Solar water disinfection at point of consumption

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## CONCLUSIONS

- Intervention complexity is a useful way to think about feasibility
- It complements burden of disease, cost-effectiveness, and affordability considerations
- It can help to identify R&D priorities to simplify interventions
- It can guide decisions on how to implement interventions in specific settings

Intervention complexity is a useful additional criterion for decision making on scaling-up health interventions