

Disease Control Priorities Project
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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

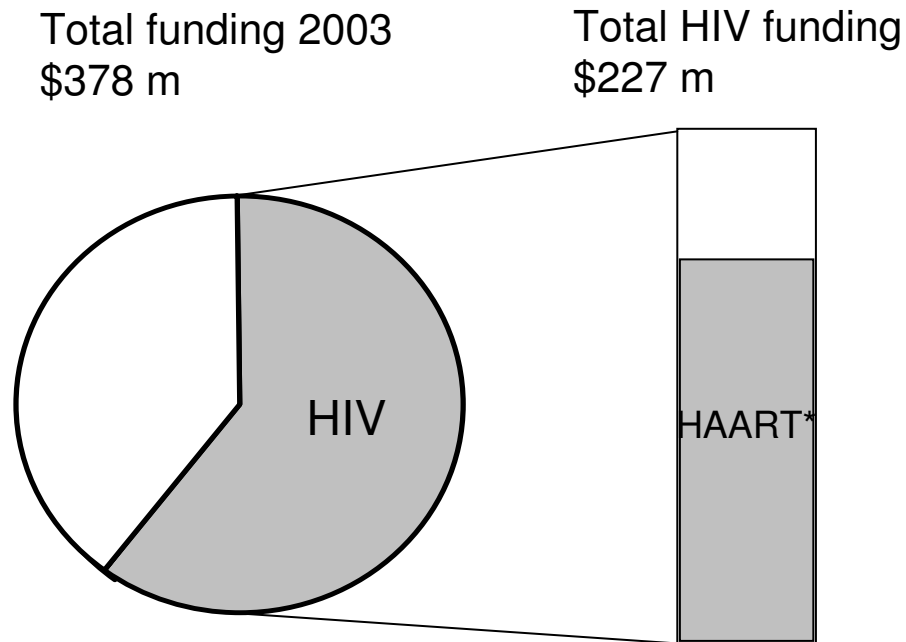
- Are there particular interventions that are easy to scale up?
- How can existing interventions be simplified to relax constraints?



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

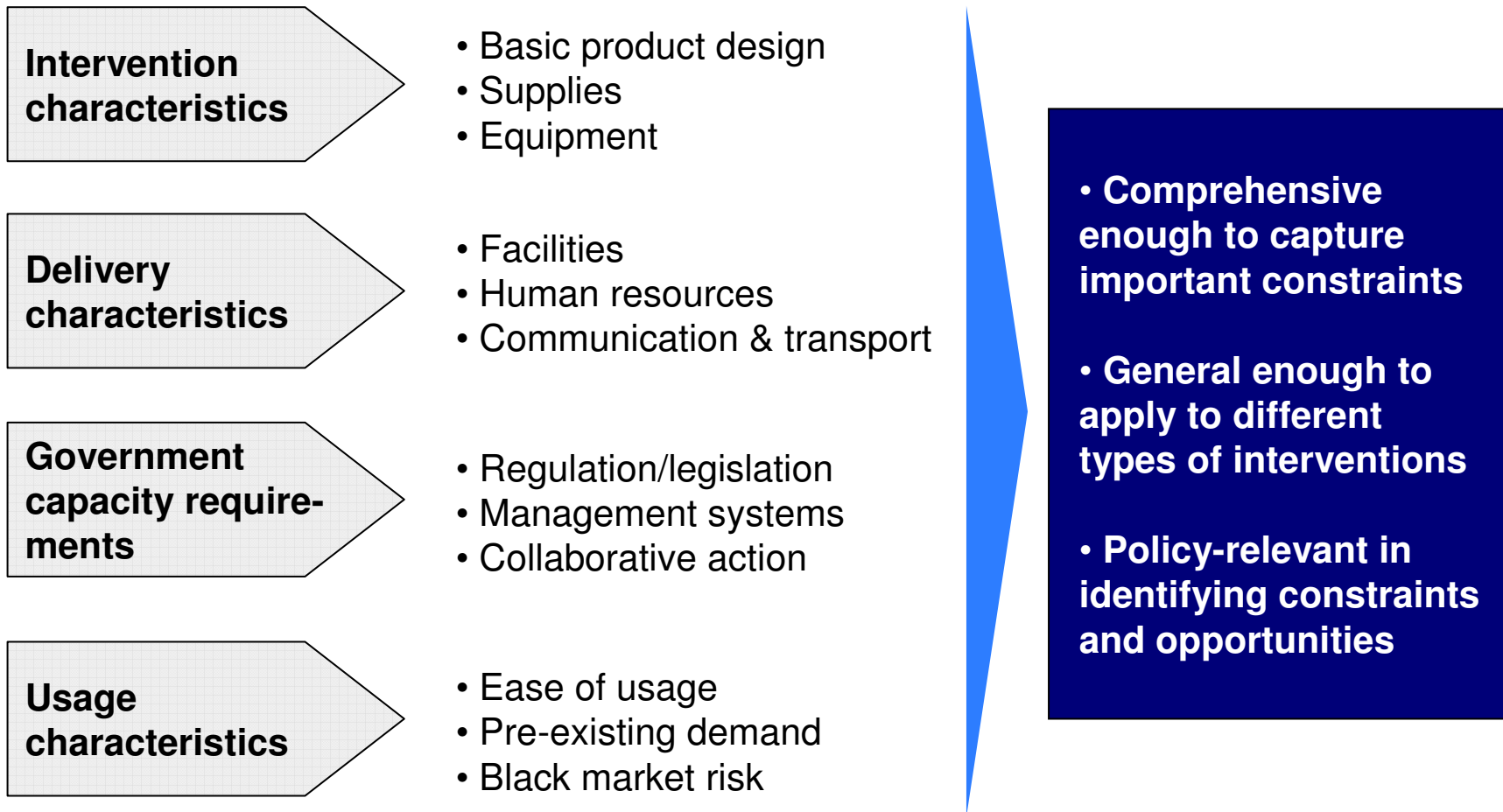
*Assuming an equal share of resources allocated per country
Source: Potts & Walsh, BMJ 2003;326:1389

- Why develop a framework for intervention complexity?

- **The conceptual framework**

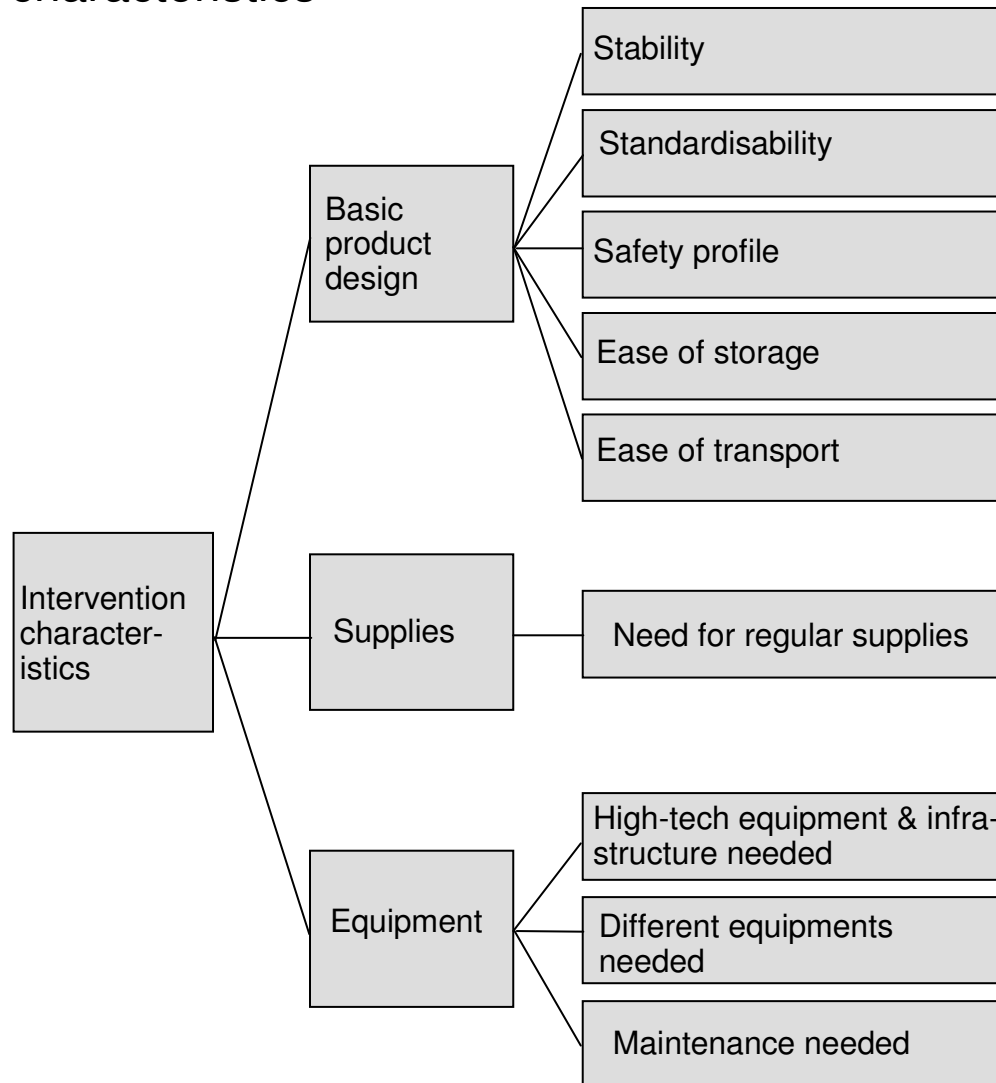
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CONCEPTUAL FRAMEWORK FOR CATEGORISING INTERVENTIONS BY THEIR DEGREE OF COMPLEXITY



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**

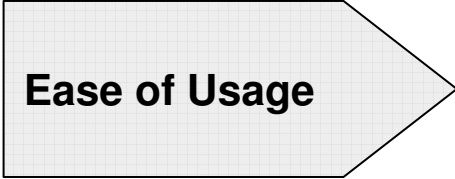
- No need for sophisticated management systems.



**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



Cost	high	New antibiotics	HAART
	low	ORT	Trachoma surgery
		low	high
		Intervention complexity	

Highly feasible interventions

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