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Economic evaluations of mass drug administration

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Mass drug administration

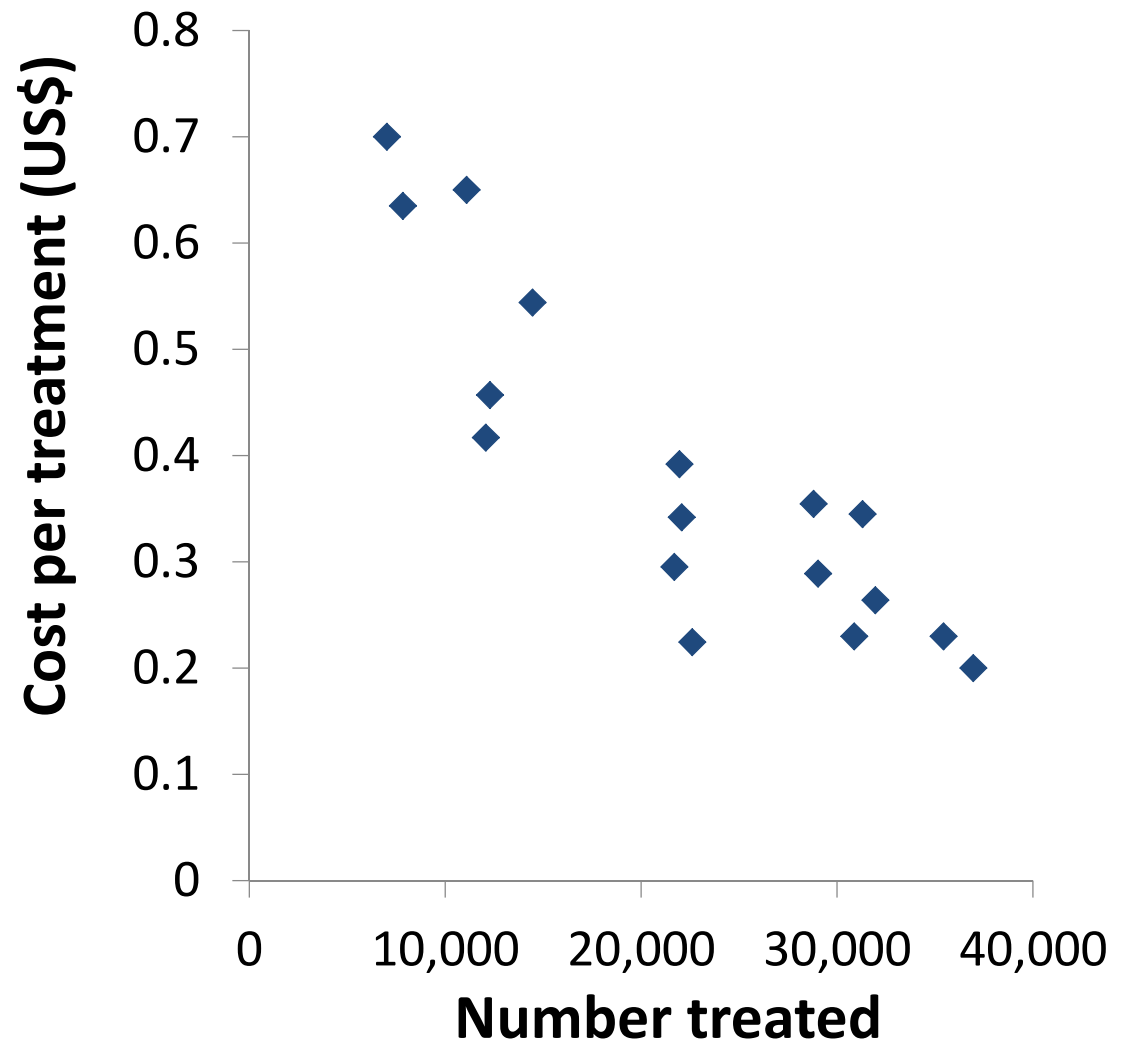
- Several NTDs are controlled by using mass drug administration (Known as MDA).
- I will give an overview of some of our health economic research on MDA within the LCNTDR.



Sources: USAID, Gebre et al. 2015

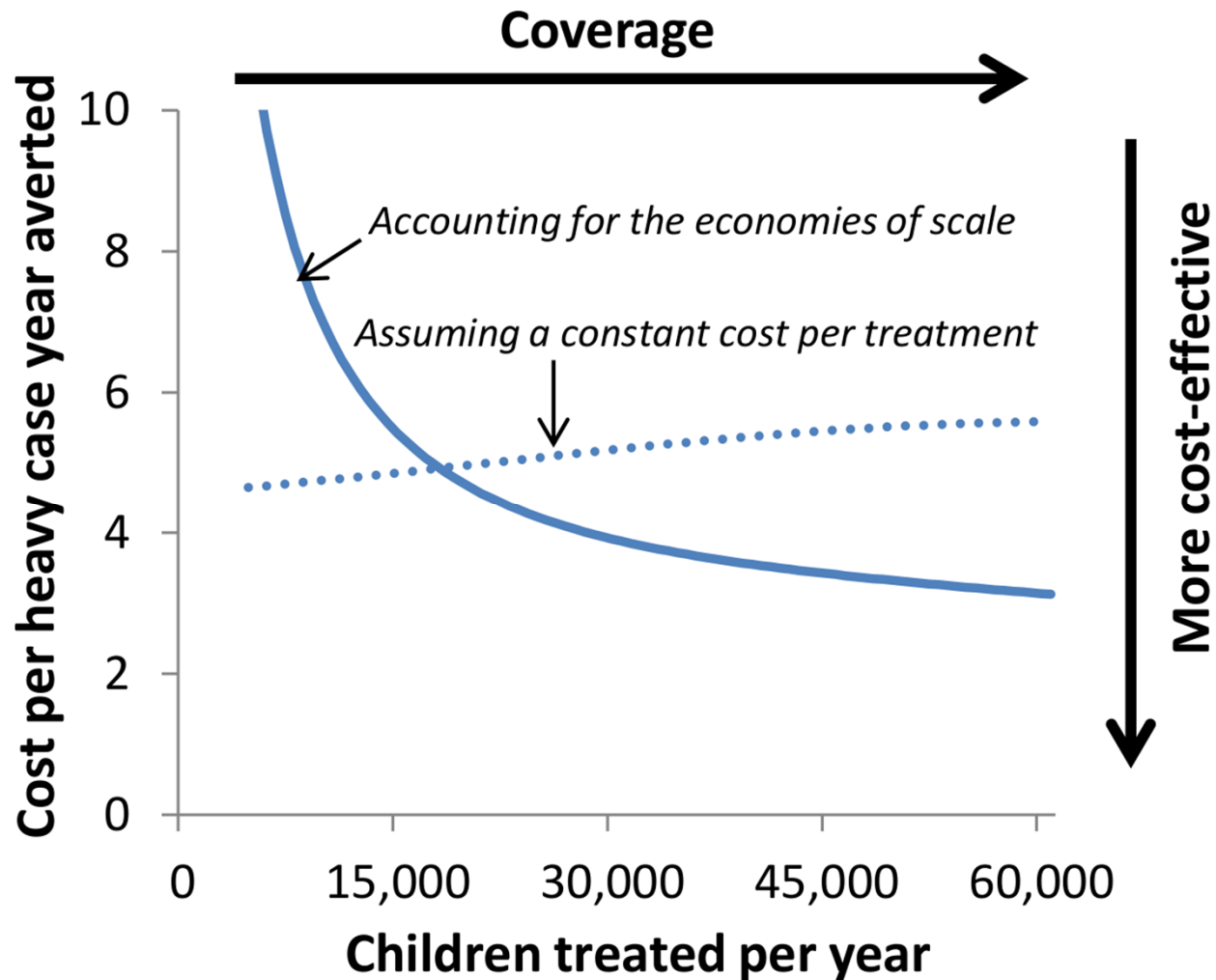
Costs of MDA and economies of scale

- Reviewed the costings studies on MDA.
- The cost per treatment varied across different settings.
- Partly due to economies of scale.



Data from Brooker *et al.* (2008)

Why this matters



- **Projections support the scaling-up of MDA**

(Turner *et al.* Lancet ID 2016, Turner *et al.* CID 2018)

Why not use selective treatment?

- Why treat everyone?
 - Could use selective treatment → where only those infected are treated?
- **HOWEVER**, testing for infection costs **\$2-5 per sample!**
- Even though MDA uses more drugs, it is **CHEAPER** and **MORE EFFECTIVE** than using selective treatment.
- We worked with the WHO on this when informing the latest deworming guidelines.

How cost-effective is MDA?

The GPELF as a case study

- 1.3 billion people in 73 endemic countries at-risk of LF.
 - In 2000, the WHO formed the GPELF.
- Between 2000 and 2014, it delivered **5.6 billion treatments**.
- We estimated that:
 - At a cost of **≈US\$3 billion**.
 - Will stop **175 million healthy life years** being lost to LF
 - Equals **US\$29** per healthy life year saved.

(Turner *et al.* CID 2017)

Economic benefits of the GPELF

- Over \$100 billion in potential economic loss will be averted over the lifetime of those treated by the GPELF
 - -> Long term economic benefits are **30 times** the programmes costs.
- Useful for policy makers and advocacy group in justifying continued investment in NTD control.

Key messages

- MDA can be very cost-effective and it can generate economic benefits.
- However, the **MOST** cost-effective approach **WILL** depend on the local setting.
- Need to tailor the strategy to the local context more.

Thanks for listening

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Community health volunteers

- In many countries MDA is delivered by a volunteer.
- The average economic value of their unpaid time is between **US\$0.06-0.09 per treatment for MDA.**
- With the African Programme for Onchocerciasis Control the time the volunteers donated would be valued between **US\$60-90 million.**
- Highlights that the endemic communities are also making significant commitments to NTD control!!
 - Useful for policy makers for understanding the sustainability of using volunteers.

Estimating the cost-effectiveness of MDA against filarial worms

- We have performed several economic evaluations of interventions against the filarial worms:
- **River blindness:** US\$11 per healthy life year saved in high burden settings
- **Lymphatic Filariasis:** US\$29 (14–48) per healthy life year saved
 - The GPELF would also generate up to US\$100 billion in economic benefits.
- Useful for policy makers and advocacy group in justifying continued investment in NTD control.

Costs –
Finan
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to
Result
Abbrev
^aRange
^bStratit
regime

Drug	Average Cost/Economic Value per Treatment ^a
DEC	\$0.044
ALB	\$0.052
IVM	\$4.635
Treatment delivery cost type	Average Cost Per Treatment (95% Confidence Interval)
Financial costs	\$0.46 (\$0.21–\$0.76)
Economic costs excluding DDV	\$0.56 (\$0.25–\$0.94)
Economic costs including DDV (overall average of the Global Programme to Eliminate Lymphatic Filariasis)	\$1.32 (\$1.00–\$1.69)
Economic costs including DDV (IVM and ALB regimen)	\$5.25 (\$4.93–\$5.62)
Economic costs including DDV (DEC and ALB regimen)	\$0.66 (\$0.34–\$1.03)

Abbreviations: ALB, albendazole; DDV, donated drugs value; DEC, diethylcarbamazine; IVM, ivermectin.

Cost per Disability-Adjusted Life
Years Averted (\$) ^a

24 (12–39)	36 (23–74)
29 (14–48)	30 (18–63)
64 (49–83) ^b	14 (11–18)

imen and 34 (18–52) for the diethylcarbamazine and albendazole