Neglected Tropical Diseases: an Overview

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Outline of presentation

- Classifying NTDs
- The burden
- What can be achieved
- Mapping the partners
- Taking it forward

I. Classifying NTDs

Neglected Tropical Diseases

- **Protozoan Infections**
  - Leishmaniasis (VL, CL and MCL)
  - Human African trypanosomiasis (sleeping sickness)
  - Chagas disease
- **Helminth Infections**
  - Soil-transmitted helminth infections
    - Ascariasis-Trichuriasis-Hookworm
  - Lymphatic filariasis (elephantiasis)
  - Onchocerciasis (river blindness)
  - Schistosomiasis
  - Dracunculiasis (guinea-worm disease)
  - Cysticercosis and other zoonotic helminthiasis
- **Viral Infections**
  - Dengue & dengue haemorrhagic fever
- **Bacterial Infections**
  - Leprosy
  - Trachoma
  - Buruli ulcer

NTDs Characteristics

Group of tropical infectious diseases which cause immense suffering:

- life-long disabilities;
- impair childhood growth and development;
- promote poverty, impair education and economic development;
- do not receive attention and funding as do “the big three” (AIDS, TB, malaria);
- evidence that they increase morbidity and transmission of “the big three”;
- the “bottom billion” are most at risk affecting the poorest of the poor in rural and urban areas of low-income countries.

But,

- many public-private partnerships and donated products.

Global distribution of NTDs

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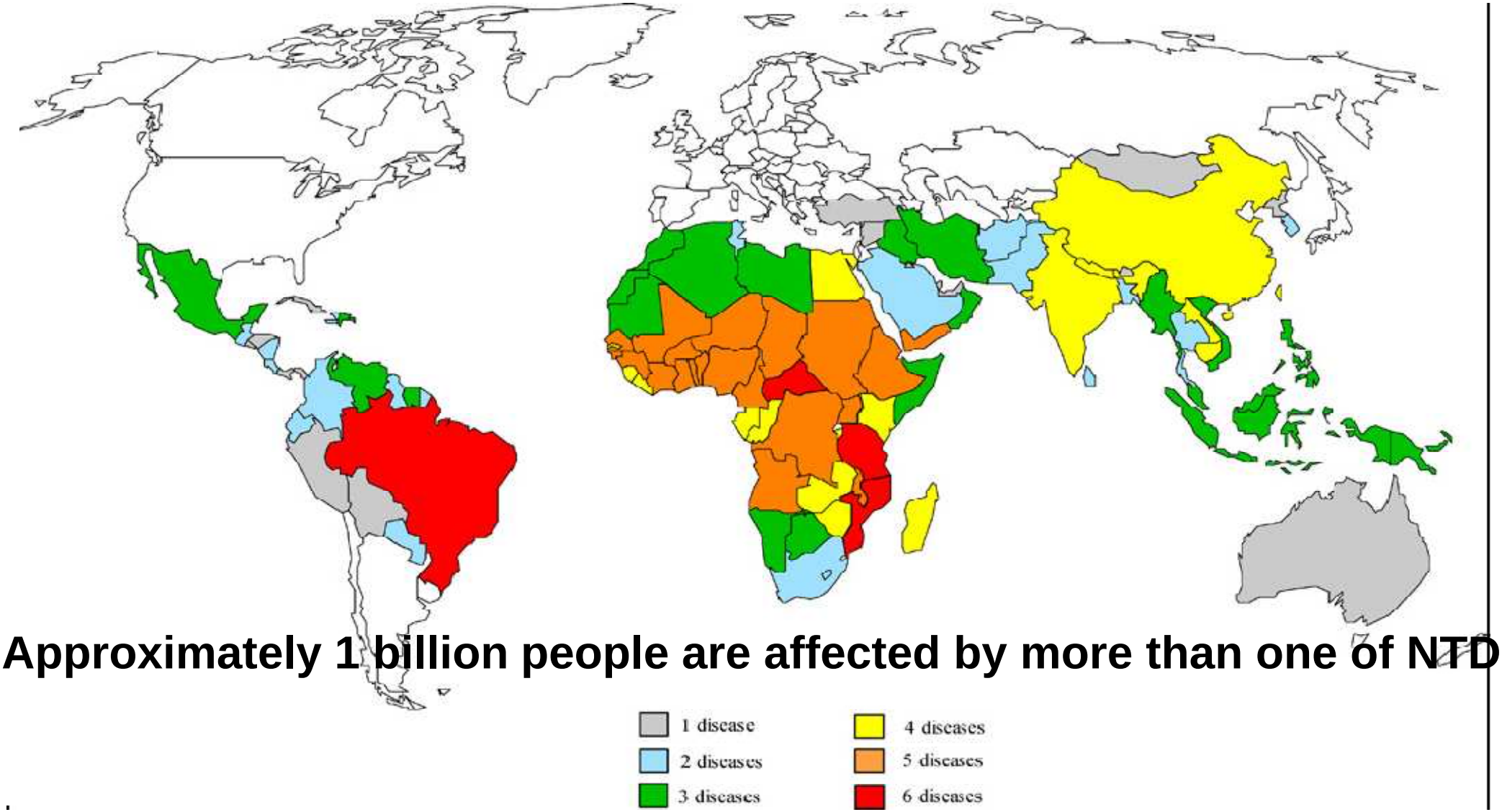
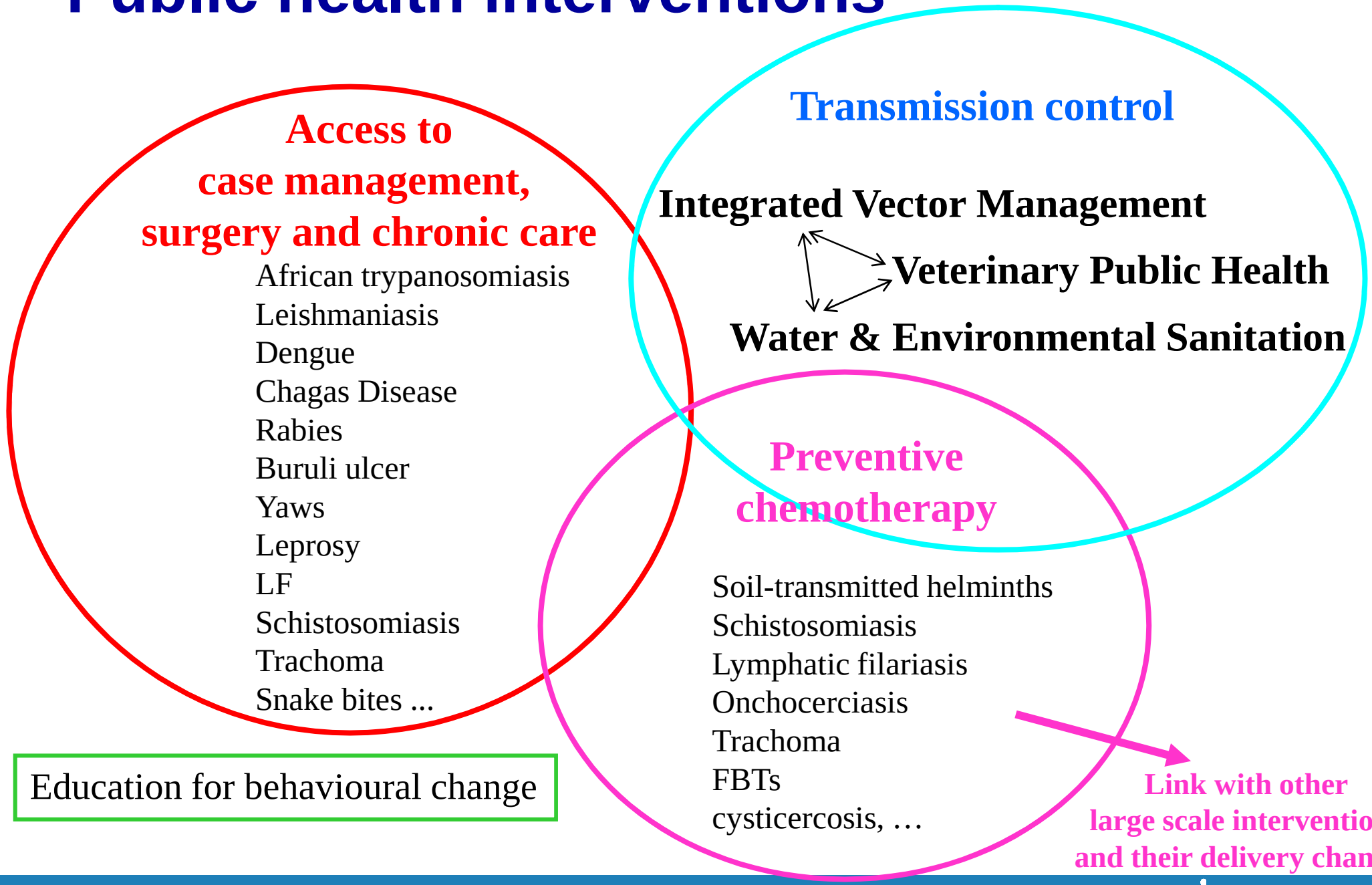


Approximately 1 billion people are affected by more than one of NTDs

Public health interventions



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Tool-ready NTDs

- Lymphatic filariasis
- Leprosy
- Onchocerciasis
- Schistosomiasis
- Helminthiasis
- Trachoma
- Yaws

→ Rapid Impact Interventions
Improving access

Tool-deficient NTDs

- Human African trypanosomiasis
- Chagas diseases
- Buruli ulcer
- Leishmaniasis
- Dengue

→ Focused interventions
Improving innovation

Cross cutting strategic approaches

- Capacity building
- Use of insecticides
- Vector borne diseases
- Veterinary diseases

→ Vector Ecology & Management
Veterinary Public Health

NTDs can be classified according to common strategic approaches

1

Tool-ready NTDs

Large scale drug administration

- ✓ Inexpensive easy diagnostics
- ✓ Safe drugs – large donations
- ✓ Integration across diseases possible

Preventive chemotherapy

Schistosomiasis

Soil transmitted helminthiasis

Lymphatic filariasis

Onchocerciasis

Trachoma

Zoonotic helminthiasis (cysticercosis, fascioliasis, *echinococcosis*, …)

Transmission control - Guinea worm

NTDs can be classified according to common strategic approaches

2

Tool-deficient NTDs

Killer or severely disfiguring diseases

Complex disease management group

- Complicated and costly
- Difficult to diagnose, dangerous drugs (resistance ↑)
- Highly skilled staff needed

Leishmaniasis

Chagas disease

Human African trypanosomiasis

Buruli ulcer

Yaws

NTDs can be classified according to common strategic approaches

3

Cross cutting strategic approaches:

Vector Ecology and Management (VEM)
Veterinary Public Health (VPH)

Policy – normative – strategic approach

- ✓ Guidelines, strategies
- ✓ Capacity building
- ✓ Sound management of PH pesticides

Dengue

Link with Malaria

Most of the NTDs are vector borne
(HAT, Leish, Chagas, LF, Oncho, Dengue, …)

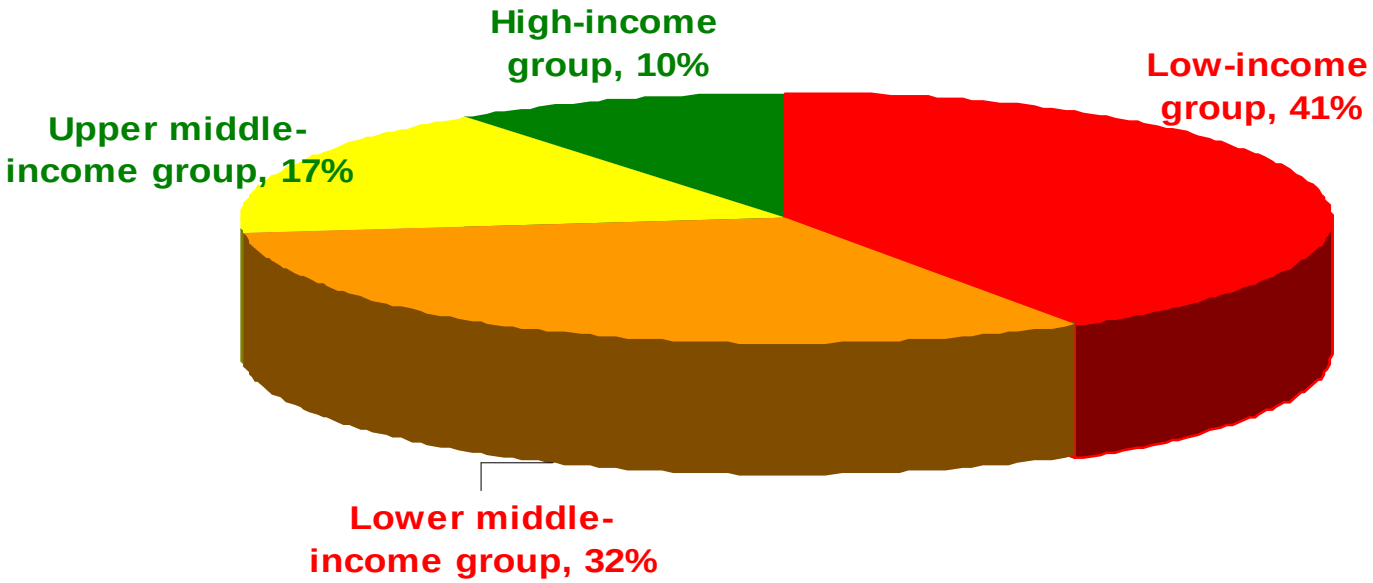
or VPH related
(Cysticercosis, Echinococcosis, Fascioliasis, Clonorchiasis/opisthorchiasis, Leish, HAT, Rabies…)

II. The Burden

Affects the world's poorest

- 2.7 billion people at risk *(living on less than US$2 per day)*
- More than 1 billion people affected
- Many by one or more neglected tropical diseases

Countries affected by NTDs by income group



- More than 70% of countries and territories affected by neglected tropical diseases are low-income and low middle-income countries
- 100% of low-income countries are affected by at least 5 neglected tropical diseases

Social and Economic Costs

- Diminish economic productivity
- Impair childhood growth and development
- Adverse pregnancy outcomes
- Affect individuals in the prime of life
- Cause blindness, disability, deformities
- Maim those infected, after years of silent infection
- Dengue, sleeping sickness, rabies and Buruli ulcer can kill within days or months

Millennium Development Goals (MDGs) and health

Of the eight MDGs, four are health-related:

- By the year 2015, to have reduced under-5 child mortality by two thirds of its current rate (***MDG 4***)
- By the year 2015, to have reduced maternal mortality by three quarters of its current rate (***MDG 5***)
- By 2015, to have halted and begun to reverse the spread of HIV/AIDS, the scourge of malaria and other major diseases that afflict humanity (***MDG 6***)
- To ensure environmental sustainability (***MDG 7***)

Sub-Saharan Africa – highest burden of NTDs

Condition	No. of cases	Global burden
Hookworm	198m	One third
Round worm	173m	14-22%
Schistosomiasis	166m	89%
Trichuriasis	162m	20-26%
Trachoma	33m	40%
Lymphatic filariasis	46m	38%
River blindness	18m	99%
Sleeping sickness	Circa 50,000	100%
Guinea worm	25,000	100%
And then there is leprosy, buruli ulcer, tapeworms, cysticercosis, etc		

III. What can be achieved

Unrecognised large scale successes

- **Filariasis** (China) - 350 million now free of threat of disease. Transmission arrested (other small scale examples)
- **Onchocerciasis** (river blindness) no longer a public health problem in 10 countries
- **Chagas disease** - domestic transmission eliminated in 5 countries of South America and transfusion transmission eliminated
- **Schistosomiasis** controlled in China and Egypt

Unrecognised large scale successes

- Active **trachoma** prevalence in Morocco in under 10's reduced by 90%
- **Soil transmitted helminths** – Burkina Faso and Cambodia reached WHA target of 75% children under regular treatment by 2010 at a cost of US$0.02
- **Leprosy** eliminated as a public health problem through MDT- prevalence reduced by 90%; only 3 countries out of 122 remain endemic
- **Guinea-worm Eradication Programme** reduced cases from circa 900,000 in mid 80' to 4,619 in 2008

A strategy that works

- Economic rates of return - 15-30%
- Costs are around US$0.50/person/year - often much less
- Multiple impacts
- Sustainable, community based delivery, school based treatment
- Pro-poor, MDG relevant
- Donated drugs - high quality 70% reach target population

Pharmaceutical Donation Programmes

Merck & Co Inc
Mectizan for as long as needed for onchocerciasis and filariasis in Africa

Johnson & Johnson
Mebendazole for intestinal worms

Pfizer
Azithromycin for trachoma 120 million doses

Bayer
Nifurtimox for Chagas and HAT to 2012

Novartis
MDT and clofazimine for leprosy;

triclabendazole for fascioliasis

GlaxoSmithKline
Albendazole for lymphatic filariasis for as long as needed

Sanofi Aventis
Eflornithine and melarsoprol support for sleeping sickness treatment

Merck KGaA

Merck KgaA
Praziquantel for schistosomiasis to 2017

Free and timely access to high-quality medicines

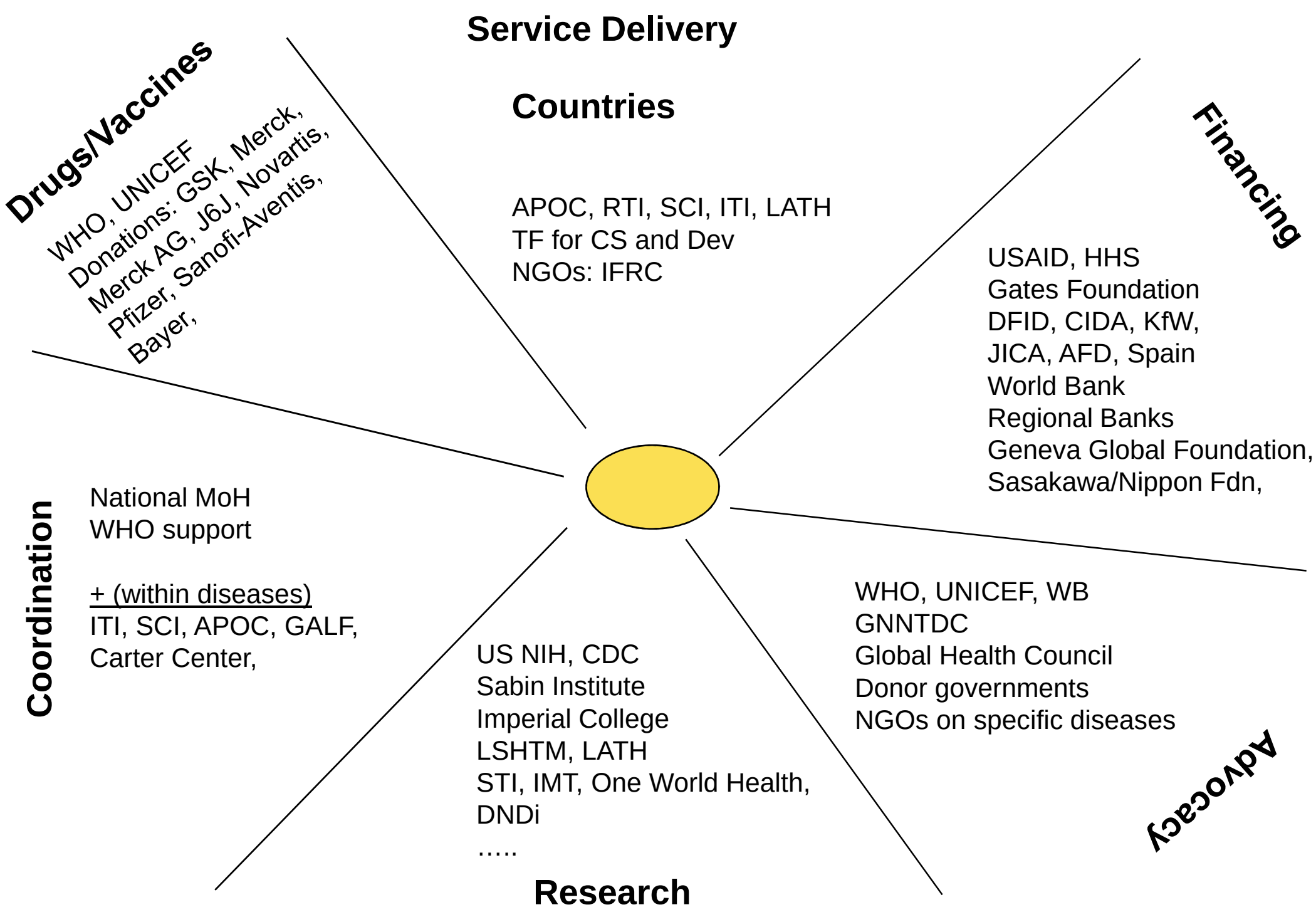
Medicine	Donator	Conditions
Albendazole	GlaxoSmithKline	Unlimited quantity for lymphatic filariasis only (not for soil-transmitted helminthiasis)
Eflornithine	sanofi-aventis	Unlimited quantity by 2012 for human African trypanosomiasis
Ivermectin *	Merck & Co Inc.	Directly to countries for lymphatic filariasis and onchocerciasis
MDT and Clofazimine	Novartis	Unlimited quantity for Leprosy and its complications
Mebendazole *	Johnson & Johnson	50 million tablets in 2007 for Soil-transmitted helminths control programmes for children
Melarsoprol	sanofi-aventis	Unlimited quantity by 2012 for human African trypanosomiasis
Nifurtimox	Bayer	500 000 tablets (120 mg) per year by 2012 for treatment of Chagas disease
Pentamidine	sanofi-aventis	Unlimited quantity by 2012 for human African trypanosomiasis
Praziquantel	Merck KGaA	200 million tablets 2008-2017 for Schistosomiasis
Suramine	Bayer	Unlimited quantity by 2012 for human African trypanosomiasis
Triclabendazole	Novartis	600 000 tablets 2007-2009 for fascioliasis

* Donation made not directly to WHO

IV. Mapping the partners

Partner Group	Name	Role and Main responsibilities
Governments	**National authorities of endemic countries**	▪ Owner and beneficiaries of National Plans ▪ Engage/lead all stakeholders ▪ Implement the full range of activities ▪ Invest national resources (human, financial, infrastructure)
Spearheading partners	**WHO**	▪ Provide strategic directions, technical assistance, operational support, capacity building (NTD and health systems) ▪ Procurement of essential medicines ▪ Monitor and evaluate progress ▪ Support surveillance systems, resource mobilization, donor coordination, advocacy and public information
	UNICEF, WFP, FAO	▪ Leading partners in strategy, implementation, procurement and distribution
	GNNTDC	▪ Advocacy and resource mobilization based on national plans
	Technical agencies and Academia (US CDC, IMT, LSTM, LSHTM, STI, others)	▪ Scientific knowledge, research, training and evaluation

Partner Group	Name	Role and Main responsibilities
Donors and technical partners	Agencies for international development cooperation (CIDA, DFID, France, GTZ, JICA, KFW, Spain, USAID, others)	▪ Provide multilateral and bilateral support ▪ Undertake high-level advocacy with endemic countries and other partners ▪ Provide access to technical expertise within their countries
	Foundations including B&MGF, Nippon Foundation, others	▪Provide financial support, advocacy and assistance in partnership development
	Pharma and generic manufacturers	▪ Manufacture, donation, preferential prices ▪ Pharmaco vigilance, logistics and research
	Development banks and multilateral agencies including World Bank	▪ Provide access to country-level financing through "soft loans"
Disease specific coalitions	APOC, GAELF, ITI, RISEAL, RTI, SCI, Task force for Child Survival, others	▪ At their request, assist national programmes in implementing NTD control
International humanitarian organizations, NGOs, FBOs	International Federation of Red Cross, Red Crescent Societies, MSF, various NGOs and FBOs working in the control of NTDs	▪ Conduct advocacy at international, national levels ▪ Contribute financial, operational and technical support in priority countries ▪ Assist in facilitating access in areas of conflict and refugees populations ▪ Contribute to the implementation of activities in the field



World Health Organization

A Large Array of Partners....

ILEP

Working for a world... without Leprosy

International Federation of Red Cross and Red Crescent Societies

THE CARTER CENTER
Waging Peace. Fighting Disease. Building Hope.

MECTIZAN® DONATION PROGRAM

NTD Neglected Tropical Disease Control Program

PPC

RTI INTERNATIONAL

AFUTUREFREEOFLF Global Alliance

UN Agencies

The Task Force for Child Survival and Development

LATH LIVERPOOL ASSOCIATES IN TROPICAL HEALTH

SCI Schistosomiasis Control Initiative

FAO FIAT PANIS

unicef

WFP

World Health Organization

LIVERPOOL SCHOOL OF TROPICAL MEDICINE

International Trachoma Initiative

ADVOCACY

GNNTDC GLOBAL NETWORK FOR NEGLECTED TROPICAL DISEASE CONTROL

The Earth Institute AT COLUMBIA UNIVERSITY
Mobilizing the Sciences and Public Policy to Build a Prosperous and Sustainable Future

IMA World Health

Helen Keller INTERNATIONAL

RESEARCH

TDR

DNDi
Drugs for Neglected Diseases *initiative*

Swiss Tropical Institute
Schweizerisches Tropeninstitut
Institut Tropical Suisse

SABIN VACCINE INSTITUTE

Institute of Tropical Medicine Antwerp

DBL Centre for Health Research and Development

iOWH Institute for OneWorld Health
A Nonprofit Pharmaceutical Company

Other Partnerships:

VISION 2020 THE RIGHT TO SIGHT

GET 2020

DONORS

USAID FROM THE AMERICAN PEOPLE

BILL & MELINDA GATES *foundation*

afd Agence Française de Développement

DFID Department for International Development

GENEVA GLOBAL *Performance Philanthropy*

The Great Britain SASAKAWA FOUNDATION

日本財団 The Nippon Foundation

Canadian International Development Agency

Agence canadienne de développement international

AGENCIA ESPAÑOLA DE COOPERACIÓN INTERNACIONAL

kfw BANKENGRUPPE

gtz

JICA Japan International Cooperation Agency

The World Bank
IBRD & IDA: Working for a World Free of Poverty

V. Taking it forward

Need for a collaborative and coordination platform

- Governmental leadership and ownership
  - Facilitate engagement of multiple stakeholders at country level
- Multiple diseases, initiatives and supporting efforts, private sector engagement – require coordination
  - Support and access to governments
- Lean, transparent and effective coalition needed
- Avoiding duplication of effort
- Advocacy based on quantitative knowledge

Key needs (cont)

- Support countries and national health systems
  - Pursuing integrated preventive chemotherapy
  - Supporting other NTDs (eradication, elimination, control)
- Manage new funding
  - New NTD FUND or coordinating multiple funding channels to countries?
  - Country support vs. NGO support, UN and technical agencies
- Coordinate drug procurement and distribution
- Coordinate technical support
- Enhance monitoring and evaluation
- Increase advocacy and communication

Challenges

- Multiple diseases
  - Some in integrated package, others not
  - Many NGOs specific to one disease
  - Eradication, elimination, control approaches differ
- Different partners per disease
- Country coordination
- Learn from past and avoid pitfalls
- Emerging competition -- Manage growth of the field (including new funding and emerging factions)

Thank you