Presentation Overview

• General introduction to the Bill and Melinda Gates Foundation (BMGF)
• Why we invest in the neglected diseases
• Discuss the evolution NTD program over time;
• Current strategies and approaches;
• Progress towards eliminating;
• Measures for programmatic “success,”
• Opportunities to build upon our investment strategies to address the underlying causal factors
EVERY PERSON DESERVES THE CHANCE TO LIVE A HEALTHY, PRODUCTIVE LIFE.
Our History

1998
Bill and Melinda read an article about rotavirus.

2000
They officially create the foundation.

2006
Warren Buffett decides to give Berkshire Hathaway stock.

2008
Bill joins Melinda full-time at the foundation.
Our Approach to Giving

STEP ONE: Develop Strategy

STEP TWO: Make Grants

STEP THREE: Measure Progress

STEP FOUR: Adjust Strategy
2009 Grants Paid Summary
(by Program Area)

Global Development Program
$686,000,000

Global Health Program
$1,826,000,000

United States Program
$530,000,000

For the year ended December 31, 2009. Dollars rounded to the nearest million.
Why fight the neglected diseases?

• The **diseases flourish under conditions linked to poverty** – unsafe water, poor sanitation, substandard housing and war.
• 100% of the lowest-income countries are **affected simultaneously by up to five** of these infectious diseases.
• The diseases receive **low levels of public attention** and a relative **lack of resources** in the global health field.
• **Children suffer the most** and live with the consequences into adulthood.
Diseases in the Portfolio

- Guinea worm
- Lymphatic filariasis
- Onchocerciasis
- Cysticerciosis
- Trachoma
- Schistosomiasis
- Hookworm and other soil-transmitted helminths
- **Kineto-plastids**
  - Visceral leishmaniasis
  - Human African trypanosomiasis
- **Flaviviruses**
  - Japanese encephalitis
  - Dengue fever
- HPV

**NTDs are Beyond the numbers**

- **Painful**
- **Stigmatizing**
- **Debilitating**

Main driver for the investment is inequity
Although their mortality is relatively low, diseases in the portfolio have a high collective DALY burden.

The risk of burden underestimation is especially high for these diseases, due to the relative lack of resources and attention devoted to quantifying their impact:

- For example, published WHO data support that the DALY burden for hookworm and soil-transmitted helminths may be up to 13 times higher than previously reported.
- The relationship between anemia, cognitive impairment, and long-term chronic disability is only partially understood.
- We find these upward revised estimates to be analytically sound, but further research and surveillance are needed.

DALY burden not fully understood and likely an underestimate.

Neglected and Other Infectious Diseases: Aspirational Goals (not declaring new global targets!)

**Rationale for Disease Selection**

- High burden on the poorest
- Lack of private market to drive development
- Potential to be eradicated or eliminated

**Catalytic investments in transformative tools**

**ERADICATION**
- Permanent reduction to zero so active measures no longer required
  - Guinea worm disease
  - Onchocerciasis
  - Lymphatic filariasis

**ELIMINATION**
- Burden of disease or infection reduced to undetectable levels but active measures still required
  - Dengue fever
  - Japanese encephalitis
  - Human papillomavirus
  - Human African trypanosomiasis
  - Trachoma
  - Cysticercosis
  - Visceral leishmaniasis (S. Asia)
  - Schistosomiasis
  - Rabies

**CONTROL**
- Burden reduced to locally acceptable levels and control measures still required
  - Visceral leishmaniasis (Africa)
  - Hookworm and soil-transmitted helminths
Theory of Change

1) Invest strategically in:
- Drug treatments
- Vaccines
- Diagnostics and new biomarkers
- Vector control tools and strategies
- Implementation strategy

And advocate for:
- Funds for implementation
- Resources for Neglected Diseases
- Success of FDA voucher program
- Global political support

2) Fulfill near-term objectives...
- Prove drug, vaccine, diagnostic and vector control safety and effectiveness
- Demonstrate impact
- Integrate systems of delivery
- Establish monitoring and indicators of progress

3) Achieve measurable, long-term goals
- Eradication
- Elimination
- Control

Reduce the suffering, deaths and burden on global poverty
Neglected and Other Infectious Diseases team focus

- Discover and develop transformative new tools: 51-60%
- R&D to improve current tools: 6-7%
- Model and test strategies for elimination: 23-27%
- Scale up and sustain disease programs: 6-7%
- Enabling Activities: Advocate for increased funding and political will, and advance policy change and financing mechanisms: 5-8%

(est. 2010-2015)
# BMGF Neglected Disease Investment

<table>
<thead>
<tr>
<th>Year</th>
<th>Annual Spend</th>
</tr>
</thead>
<tbody>
<tr>
<td>1998</td>
<td>400,000</td>
</tr>
<tr>
<td>1999</td>
<td>3,890,226</td>
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<tr>
<td>2000</td>
<td>61,924,277</td>
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<tr>
<td>2001</td>
<td>11,720,794</td>
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<td>2002</td>
<td>22,548,189</td>
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<tr>
<td>2003</td>
<td>31,391,197</td>
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<tr>
<td>2004</td>
<td>32,503,192</td>
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<tr>
<td>2005</td>
<td>56,741,889</td>
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<tr>
<td>2006</td>
<td>67,320,978</td>
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<tr>
<td>2007</td>
<td>71,293,137</td>
</tr>
<tr>
<td>2008</td>
<td>126,255,531</td>
</tr>
<tr>
<td>2009</td>
<td>80,283,807</td>
</tr>
<tr>
<td>2010 E</td>
<td>90,000,000</td>
</tr>
<tr>
<td>TOTAL 1998 - 2009</td>
<td>566,273,217</td>
</tr>
</tbody>
</table>
Accomplishments have been made in all disease areas

For Example:

<table>
<thead>
<tr>
<th>Disease</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Guinea worm</td>
<td>Cases have decreased by 99% globally; disease has been eliminated from 16 of 20 countries; on track for eradication 2012</td>
</tr>
<tr>
<td>Lymphatic filariasis</td>
<td>Prevented over 2.5 million LF infections in the last five years; exponential scale up of MDA</td>
</tr>
<tr>
<td>Onchocerciasis</td>
<td>Six of 13 areas in the Americas were able to stop treatment because transmission has been successfully interrupted, on target for 2012 elimination in the Americas</td>
</tr>
<tr>
<td>Cysticercosis</td>
<td>Successful development of toolbox to eliminate cysticercosis by treatment of humans and pigs</td>
</tr>
<tr>
<td>Trachoma</td>
<td>Trachoma research shows preliminary finding that azithromycin decreases pediatric mortality by half due to decrease in several other infections</td>
</tr>
<tr>
<td>Schistosomiasis</td>
<td>New data show that female genital schistosomiasis is associated with significant two-fold higher rates of HIV seropositivity</td>
</tr>
<tr>
<td>Soil-transmitted helminths</td>
<td>Anti-helminthic treatment through mass drug administration reaches over half a billion children</td>
</tr>
<tr>
<td>Visceral leishmaniasis</td>
<td>New combination regimens shorten therapy to 7-10 days and have 98% efficacy</td>
</tr>
<tr>
<td>Human African trypanosomiasis</td>
<td>Promising new candidate, fexinidazole, enters phase 1 trials</td>
</tr>
<tr>
<td>Japanese encephalitis</td>
<td>India, Nepal, Cambodia and Sri Lanka have immunized almost 100 million children</td>
</tr>
<tr>
<td>Dengue fever</td>
<td>One vaccine in phase 2b clinical trial (funded by industry)</td>
</tr>
<tr>
<td>Human papillomavirus</td>
<td>Novel low-cost screening method piloted in 25 countries, screening 200,000 women of whom 15,000 had HPV precancerous lesions ablated by low-cost cryotherapy; China screens 10M women</td>
</tr>
</tbody>
</table>
History of BMGF strategy

Initial situation with NTDs:

- Lymphatic filariasis
- Onchocerciasis
- Trachoma
- Guinea worm
- Hookworm and soil-transmitted helminths
- Schistosomiasis
- African sleeping sickness
- Cysticercosis
- Visceral Leishmaniasis

- Many diverse diseases
- Some without a great deal of progress
- Poor political will
- Some with good tools
- Others still in need of better tools and strategies
Initial situation with NTDs:

**Diseases with good existing tools and strategies But still need some work**

- Lymphatic filariasis
- Onchocerciasis
- Trachoma
- Guinea worm
- Schistosomiasis
- Hookworm and soil-transmitted helminths

**Diseases in need of new tools or strategies to make real progress**

- African sleeping sickness
- Cysticercosis
- Visceral Leishmaniasis

This led to Phase 1 of our work, investing in applying the available tools towards control targets.
Phase 1 NTD program: catalyzing implementation and evaluation of disease specific strategies

- Guinea worm
- Onchocerciasis
- Lymphatic filariasis
- Cysticercosis
- Schistosomiasis
- Trachoma
- Hookworm & STH
- Visceral Leish
- Sleeping Sickness
With this strategy we can accomplish more

- Guinea worm
- Onchocerciasis
- Lymphatic filariasis
- Cysticercosis
- Schistosomiasis
- Trachoma
- Hookworm & STH
- Visceral Leish
- Sleeping Sickness
Examples of grants under consideration 2010
Monitoring progress

Progress against strategy
» Annual strategic goals
» Foundation scorecard
» Annual report
» Strategy updates and refresh

Project progress
» Annual reporting
» Project milestones
» Board or technical advisory participation
» Presentations and BMGF meetings (PDP and GCE)
» Global access plans
» Communications and advocacy plans
Components of NTD control

Current NTD strategy has focused on R&D with new tool development and strategies for integrated program implementation. Additional resources and partnership are needed to be able to reach additional communities and leverage additional resources.
Conclusions

• BMGF remain committed to NTDs
• We have a defined strategy and approach-focused investments
• Strategy is a living process
• Partnership is key to any public health impact
• An area with incredible opportunity for impact
• Still a lot that we need to know and do
Thank you

We can do anything together