Eradicating guinea worm disease

Going for the last mile ...

Agum J, Biswas G, Engels D, Ichimori K, Tayeh A
**Dracunculus medinensis**
A perfect candidate for eradication

- **High** perceived burden of disease (guarantee for popular support)
- **Easy & unambiguous (clinical) diagnosis**
- **Human** is the only final host (no animal reservoir)
- Disease has a **limited** geographical distribution and is seasonal
- **Feasibility of** successful interruption of transmission demonstrated in several settings - **interventions** are relatively simple, effective, and inexpensive
- **Synergy** of attack with other interventions (Safe Water Supply)
Life cycle (duration ~1 year) and preventive measures

- Use of water filters
- Safe drinking water
- Copepod control
- Case containment

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The set of interventions

- Community-based surveillance to detect cases early
- Intensive case containment measures
- Safe water
  - Provision of safe water
  - Provision of filtering devices
  - Selective chemical treatment of water sources
- Health education for high compliance/implementation rates
Case containment:
Copepod control
Safe water supply

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Provision (and correct use) of filtering devices
Guinea Worm Eradication
Who are the main actors and what did it cost?

Affected countries, with as main international partners

External contributions for GWE (1987-2007)
145 M US$
Estimated funding needs (2008-2012)
72 M US$

BMGF (1987-2007)
Other Donors (1987-2007)
BMGF (2008-2012)
Funding Gap (2008-2012)
WHA Resolutions - deadlines

- WHA34.25 of 22 May 1981 for International Drinking Water Supply and Sanitation Decade (stressing that the Decade present an opportunity to eliminate Guinea-worm disease)

- WHA39.21 of 16 May 1986 initiating Guinea-worm elimination

- WHA42.29, of 19 May 1989 declaring the goal of eliminating the disease as a public health problem from the world in the 1990s

- WHA44.5 of 13 May 1991 Declaring the goal of eradication of guinea-worm by 1995

- WHA50.35 of 14 May 1997 calling for extra efforts to eradicate the disease

- WHA57.9 of 22 May 2004 Declaring the goal of eradication of guinea-worm by 2009 (Geneva Declaration).
Global number of dracunculiasis cases, 1989-2008

- 20 countries
- 6 countries

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Further progress in 2008

Sudan: 3618 cases (-38%)
Ghana: 501 cases (-85%)
Mali: 417 cases (+33%)
Ethiopia (41); Nigeria (38); Niger (3)

Further progress in 2008

Jan-Feb 2008: 257 cases
Jan-Feb 2009: 122 cases (-52%)

Reported case containment rates:
Ghana 85%
Mali 85%
Sudan 49%
Ethiopia 78%; Nigeria 100%; Niger 67%

Sudan: 3618 cases (-38%)
How long will it still take to eradicate dracunculiasis?

Number of dracunculiasis cases at the start of full scale GWE effort and time taken to achieve 0 cases

Ghana: -85% (2007-2008)
Sudan: -38% (2007-2008)

Pakistan: number of reported cases

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<td>2400</td>
<td>1111</td>
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<td>160</td>
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-54% -52% -70% -34% -78% -91% -100%

-42% per year
-2.5 yrs


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Remaining challenges or threats

Situation in 2008

Surveillance!

- Village with dracunculiasis cases
Remaining challenges or threats

War = \textit{Dracunculus’} best friend
WHO's specific responsibility:
Guiding countries towards Certification of Eradication

• **Surveillance in Guinea worm-free areas**
  - Endemic countries to develop and maintain surveillance, reporting, and response capacity in Guinea worm-free areas

• **Pre-certification (for 3+ years after the last case)**
  - Setting up of a National Certification Committee (NCC)
  - Continue and extend surveillance
  - Rumors registration and investigation
  - Reward system
  - Ad hoc case searches

• **Certification of countries as Guinea worm-free**
  - Final phase of the eradication process.
  - Starts with verification of capacity of surveillance early during pre-certification phase
  - Three-year assistance of National Certification Committee
  - Certification country by country, by ICCDE/DG, after a visit by International Certification Team.
  - Global eradication is achieved when all countries are certified free of transmission.
Pre-certification – certification
Current situation

• 180 countries certified, including six formerly endemic countries: India, Pakistan, Senegal, Yemen, CAR, and Cameroon

• 8 countries currently in the pre-certification stage: Benin, Burkina Faso, Chad, Côte d'Ivoire, Kenya, Mauritania, Togo and Uganda

• 6 countries have not yet interrupted transmission: Ghana, Ethiopia, Mali, Niger, Nigeria and Sudan

• 8 other non-endemic countries will also need to be certified by WHO in order to achieve global eradication: Angola, Brunei, Cambodia, Democratic Republic of Congo, Eritrea, Guinea, Somalia, and South Africa
Status of Certification of Dracunculiasis Eradication

Endemic countries
Countries in pre-certification
Countries not yet certified
Countries certified

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More information available at: www.who.int/dracunculiasis