Towards a Cultural History of Malaria Treatment and Control: Institutions, Methods, and Metaphors

Peter J. Brown
Professor of Anthropology and Global Health
Emory University, Atlanta, GA, USA
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Preface

• Cultural History
  – Anthropological approach

• Changing Patterns of Thought
  – Metaphors (representations)

• Personal disclosure
  – Relationship between health (i.e. malaria) and development
    • Sardinia Project (1947-51) DDT
Huge Literature on History of Malaria

- Books
  - TOMORROW OF MALARIA
    - Socrates Litsios
  - THE MAKING OF A TROPICAL DISEASE
    - A Short History of Malaria
      - Randall M. Packard (2007) p113
  - HUMANITY’S BURDEN
    - A Global History of Malaria
  - THE CONQUEST OF MALARIA
    - 1880-1982
  - Cold War, Deadly Fevers
    - L. A. Webb Jr.
What is Malaria?

(It depends on your social role)
Definitions often use metaphors
Malariologists

- Scientific puzzle
- Tropical disease
- Transmitted by mosquitoes
- Too much anopheles-human contact
- Diagnosed through microscopy
- Measured by epidemiological surveys
- Consequence of local ecology
Clinicians

- Serious medical condition
- “Great Imitator”
- Set of symptoms that can result in death
- Common cause of mortality
- Disease of malnourished or immunocompromised.
- Treated with combination artemisinin therapy
- Risk for travelers
Lab Science Researchers

• Scientific challenge
• Target for a vaccine
• Intersection of 3 interacting genomes
• Funding magnet
Global Health Advocates

- Killer
- Enemy to be eradicated
- Block to economic development
- Obstacle to be attacked with multiple strategies
- "Intolerable burden"
- Grand challenge
- Millennium development goal
- Resurging problem that must be "rolled back"
- Priority in the Global Fund "trinity"
- Global disgrace
- Feasting on the health and development of African children
- Taking costly bites out of Africa
Economists, Politicians, Development Specialists

- Block to economic development
- Drain (burden) on economy
- Cause of poverty
- Enemy of civilization
- Socioeconomic problem of agriculture
- Housing problem

The Southern Farmer’s Burden. In this 1923 USPHS cartoon, the white farmer is carrying the dual burdens of the fickle cotton economy and a black labor force embattled by malaria. The cartoon reflects the broader message that malaria blocked development and prosperity, and also the widespread assumption that blacks were disproportionately infected with malaria.

(Photographic Collection, Records of the USPHS, Record Group 90, NACP)
The People

- “Bad air”
- Inevitable fact of life
- Sudden mixture of humors
- “King of Diseases”
- Dangerous and costly fever in children
- Employment opportunity
Three Stages of Int’l/Global Health History (E. Fee 1998)

- Colonialism & Imperialism
- Cold War
- Globalization

- Tropical Medicine
- Int’l Health
- Global Health

- 1800 – 1950
- 1950 - 1990
- 1990 - present
Regulation: Biomedical Standards; Trade

Disaster and War Victim Relief

Tropical & Military Medical Research

Missionary Medicine & Medical Missionaries

19th Century Cultural Roots
Regulation: Biomedical Standards; Trade

Disaster and War Victim Relief

Tropical & Military Medical Science

Missionary Medicine & Medical Missionaries

Different Dress Rules
Health Orientation
19th Century Roots

Regulation: Relief

Public Health

Research

Missions

Clinical Medicine

Disease specific

Comprehensive Health
Motivations

19th Century Roots

Regulation

Science

Research

Protection of rich

Relief

Missions

Service to Poor

Mercy
Stages of Anti-Malaria Strategies

1898 – 1945: Control
- Discovery of Life cycle
- Control Experiments
- DDT

1945- 1970: Eradication
- 3 Resistances
- PHC movement
- Smallpox Eradication


1995 - present: RBM and more!
- ACTIVISM
- Gates $
Stages of Malaria Treatment

Strategies

1898 – 1945 CONTROL
1945 - 1970 ERADICATION
1970 – 1995 Chaos
1995 – present RBM

Quinine
Chloroquine
Chloroquine + others
Artemisinin Combos
- RDT,
- IMPT,
- HMM
Stages of Malaria Control Strategies

1898 – 1945 CONTROL
1945 - 1970 ERADICATION
1995 – present RBM

Drainage, Larvicides, Education, Housing
DDT
other insecticides?
Bed Nets (LITTN)
  • Indoor Spraying (DDT)
Changing Malaria Metaphors

1898 – 1945
CONTROL

1945- 1970
ERADICATION

1970 – 1995
Chaos

1995 – present
RBM

Social and Economic Problem
• Puzzle
• Death from bad air
• agriculture

War
• Enemy
• Struggle

[Silence ?]

Y2K Challenge
• Intolerable economic burden
• Killer of children
• disgrace
Vector or Parasite?
Control or Treatment?

Problem of “Anophelism without Malaria”
• subspecies with different feeding patterns
The Italian Experience (1896 – 1951)

- 1887, start of Italian public health statistics
- 1898, Anopheles mosquito identified as malaria vector
- 1901-1904, Parliamentary quinine laws
- 1915-1918, World War I
- 1940-1945, World War II
- 1947, DDT introduced

Additional images and text include:

- A book titled "Storia dell’Agro Pontino"
- A book titled "Chinino dello Stato"
- A sign reading "Sali e Tabacchi"
Quinine
Legge della Malaria (1900)

- Enlightened comprehensive policy
- State monopoly of quinine
  - Distribution out of hands of pharmacists
  - Available at State tobacco/salt shops
- Epidemiological survey of nation
Legge della Malaria (1900)

- Malaria surveillance required
- Stage 2: subsidized price
- Stage 3: free in persistent malarial zones
  - Stage 3: local malaria clinics

- Large effect on mortality but when prevalence does not change, vector control methods
Fred Soper and Marcolino Candau

- **Soper and American Culture**
  - Belief technological quick fix
  - Strict organization

- **Dir. General Candau worked with Soper in Brazilian success**
Sardinia Project (‘47 – ’51)

- Rockefeller Int’ Health Division
  - UNRAA funding for “experiment”
  - Multilateral
  - First use of DDT against indigenous vector
  - Seen as a key to economic development
Why was Nothing Learned from Sardinia Project Failure?

• Failure as species eradication
  – *A. labranchiae* sylvatic
  – HUGE cost and time over-runs

• “Spin” to make success out of failure
  – Public relations success for Rockefeller
  – Meanwhile Italian public health officials rid malaria from rest of country

• Soper as true believer
The Meaning of Eradication

- **Pull up by the roots**
  - Rid of the problem forever
  - **WAR**
  - No tolerance

- **Aggressive all-out coordinated effort**
  - Always cost effective because benefits in perpetuity

- **Time limited effort requires specialized independent agency**
  - Epitome of vertical program
  - Alienates local health systems

- **Species eradication morphs to malaria eradication**
The Meaning of Eradication

• Time limited effort requires specialized independent agency
  – Epitome of vertical program
  – Alienates local health systems

• Global program
  – WHO sets priority
  – “global” without Africa

• Species eradication morphs to malaria eradication
Silence – a Consequence of Global Eradication Failure

• Metaphor of War
  – Failure = defeat
  – Shame after grand predictions

• Eradication requires “culture of optimism”
  – ? Similarities to Polio Eradication?
  – Local resistance
1978: Pivotal Date

- Failure of Malaria Eradication
- Completion of Smallpox Eradication
- Alma Ata – Declaration
  – PRIMARY HEALTH CARE
  - “Health for All” by 2000
The Evolution of Policies: a dialectic?

Regulation of Trade and Travel

Disaster and War Victim Relief

Tropical Medicine & Military Medicine

Missionary Medicine & Medical Missions

Disease Eradication Strategies

Primary Health Care

Selective PHC

Comprehensive PHC

Child Survival: EPI

Global Fund: AIDS, TB, Malaria; new GH

Human Rights, Access to ARVs
Roll Back Malaria: Sisyphus

• A New Metaphor
  – Endless labor
  – New “old” technology

• Punishment for Sisyphus due to his hubris

• Camus (1942) sees Sisyphus as personifying the absurdity but gives meaning "The struggle itself towards the heights is enough to fill a man's heart."
Roll Back Malaria: Learning from the Past

• A New Approach
  – Partnerships
  – New “old” technology
    • Nets = improved housing

• Incredible amounts of new money
  – Renewed excitement

• Effort to integrate Treatment and Vector work

- “The limited effectiveness of recent efforts to eliminate malaria as a public health problem stems in large measure from a failure to appreciate the importance of social and economic forces in driving the epidemiology of the disease. Or, put another way, it flows from the failure to appreciate the lessons of history.”
Conclusions

• Metaphors: control, eradication, “roll back”
• Technologies: quinine, DDT, ITTN
• Treatment: quinine, chlorquine/SP, ACT
• Institutions: national, international, uncoordinated multinational

• History of cultural shifts in conceptualizing Malaria