Cholera control: current challenges

Contrôle du choléra: enjeu actuels

Vers une stratégie de réduction des risques
Atelier choléra Afrique de l'Ouest, OMS-UNICEF
Dakar 08.04.2008

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Global Task Force on Cholera Control
Cholera a well known disease

- explosive outbreaks with high mortality, but also long lasting endemicity
- treatment simple, but preparedness needed
- prevention possible, but not easy
- affects poor & marginalized populations

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Vibrio cholerae 01
Adapted from: Nature 2000, 406:469

Malabo, Equatorial Guinea, 2004
Sub-regional occurrence of reported cholera ... 
... hotspots ...
Diarrhoeal diseases:
Cholera, Shigellosis, typhoid fever, rotavirus

- third cause of death among CD
- estimated 1.8 - 2.8 million deaths/year
- explosive outbreaks (cholera, Sd1)
...ingredients for epidemics...

External conditions
- gatherings, forced migration
- environment

Living conditions
- over-crowding
- sanitation, water supply
- unsafe food

- cultural beliefs & behaviour (funerals)

- poverty

Climate change
- seasonal rains, floods
- dry season

Ecological variables
- seasonal rains, floods
- dry season

Political context

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Critical elements in diarrhoeal disease control

aim: CFR < 1%

eg. Southern Africa Initiative, 90s: occurrence of outbreaks and CFR
Epidemic Surveillance

...use data to guide intervention...

Strengthen existing surveillance systems

- assess the true burden
- identify trends over time
- identify high risk areas and vulnerable populations
- early warning of outbreaks
- strain tracking

...use standardized case definition...
Tracking the diversity of strains

Serogroup → biotype → serotype

• Classical
• El Tor
• Hybrid strains

• Inaba
• Ogawa
• Hikojima

… sharing of information across countries and continents….
Extended surveillance: go beyond counting cases and deaths

- collect demographic and economic data
- describe socio-behavioural patterns
- collect data on rainfall, seasonal patterns, …
- collect data on water sources, quality and access
- describe sanitation conditions and waste management practices…

…..perform an in-depths analysis for risk assessment …

…improve prevention and preparedness based on risk reduction…
Cholera control measures: 

**multisectoral coordinated approach**

**Environmental management to prevent occurrence:**
- safe water, adequate sanitation, proper hygiene
- food safety
- health education

**Preparedness and response to diminish impact of outbreaks**
- plan of action
- standard guidelines, training,
- emergency stocks
- access to proper health care
- health education
Cholera: severe dehydration following massive loss of body fluids (rice-water diarrhoea, vomiting)

Case management aims at rapid replacement of lost body fluids:
- ORS (new formula red. osmol.)
- IV fluid for severe cases
- AB for severe cases only (AMR)
Role of cholera vaccines

control measures not easy to implement

limited spending on water & sanitation

new approach needed

link environmental management & Oral Cholera Vaccines
(2 doses given 10 days apart)

Kolkata June 2006
Cholera vaccine use in public health
with WHO participation

NO vaccine use

Uganda

1994
Goma, DRC

1997

1999

WHO recommendations 1999

2000

WHO recommendations 2002

2003/04

WHO recommendations 2005

2004

2005

FSM

Beira

Darfur /Aceh, Indonesia

Ref: www.who.int/cholera/publications

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WHO Recommendations for cholera vaccine use in complex emergencies*

- relevance of multidisciplinary approach
- context of broader public health priorities
- 3-step decision making tool developed (to be tested)
Risk assessment for outbreaks

- multifactorial determinants: increased risk with poor sanitation, overcrowding, ...
- local pattern of transmission: movements of people, trade routes, rainy season.... unidentified factors?
- understand ecological and climatic factors, ...
  
  use predictors of outbreak (sea surface temp, salinity, ....)

....requires a good knowledge and analysis of each local situation...
Demystification required !!!

….Coordinated multisectoral approach essential for efficient control in the field

Lack of coordination in outbreak team

www.who.int/cholera ; www.who.int/globalatlas