

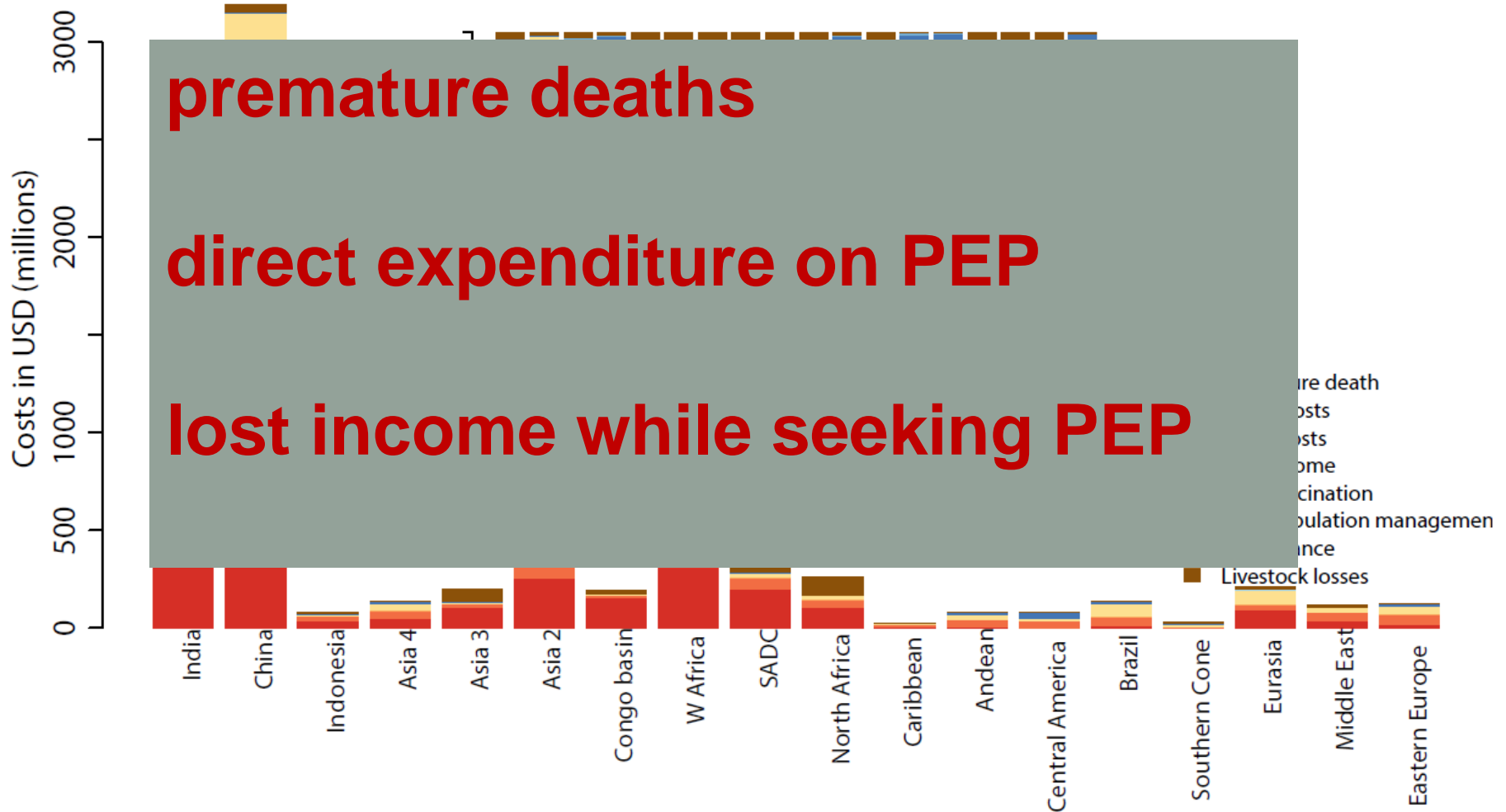
Workshop summary

MEEREB Workshop

Health economic parameters in
canine enzootic areas: pre- versus
post- exposure
prophylaxis approaches in humans

April, 2015

Overall, the annual global economic burden of rabies is US \$8.6 billion (95% CIs: 2.9-21.5 billion)



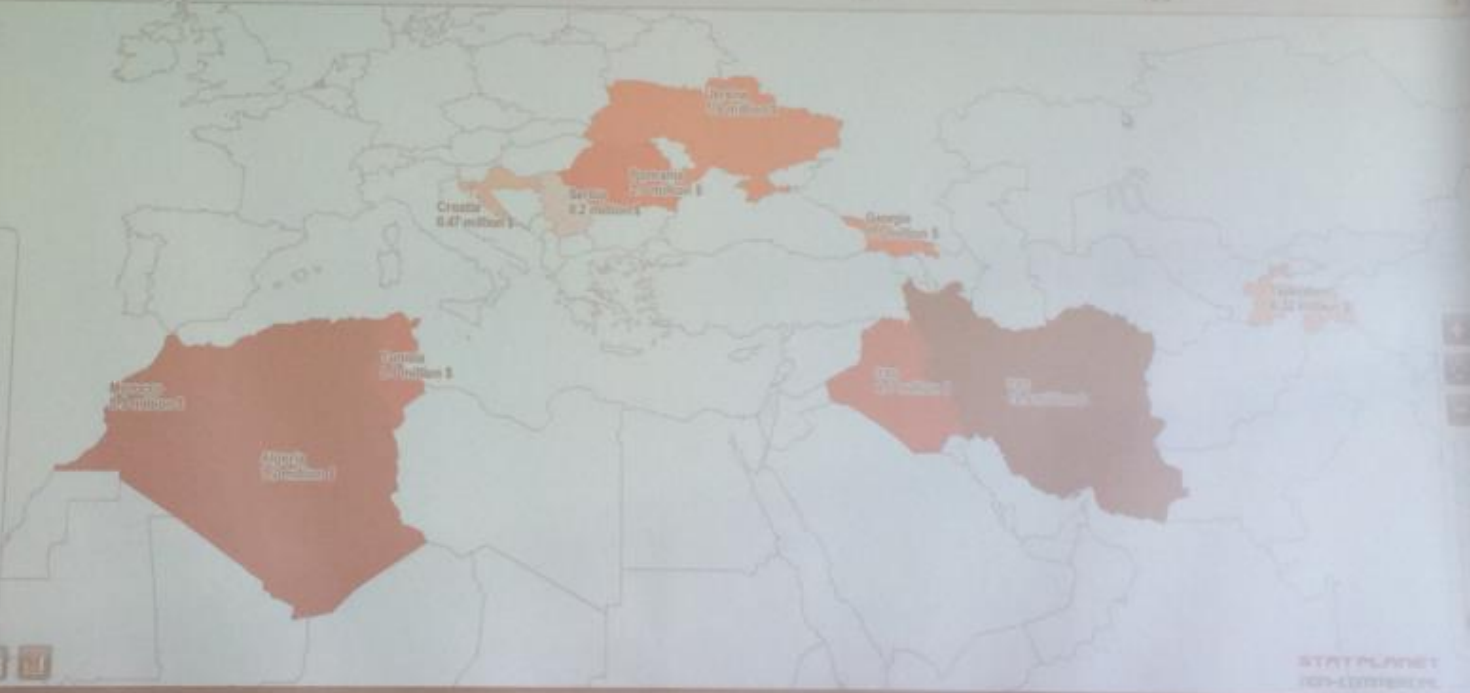
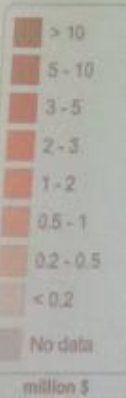
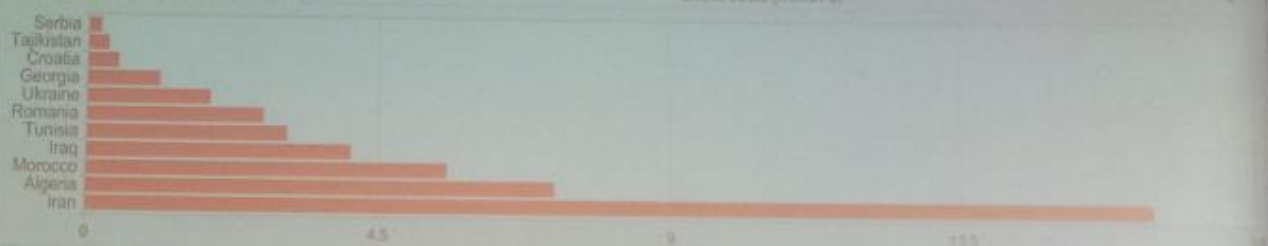
Bite Incidence (/100,000)

Direct costs

Lost income

Productivity losses from premature death

Direct costs (million \$)



Health Economics of Pre-Exposure Prophylaxis (PrEP) vs. Post-Exposure Prophylaxis (PEP) approach

- Pre-Exposure prophylaxis, WHO recommendation¹
 - Pre-Exposure Prophylaxis is recommended for anyone who is at continual, frequent or increased risk for exposure to the rabies virus, as a result of their residence or occupation [...].
 - Children living in or visiting rabies-affected areas are at particular risk and should be given pre-exposure prophylaxis on an individual basis or in mass campaigns **when there are no economic, programmatic or logistical obstacles.**

El Nido Example: *Example of a pilot project in Philippines*

Timeline of study activities



Children aged 5-14yo (n=4,700)
From 27 public schools in El
Nido, Philippines

July 2011

Jan- Feb 2012

July 2012

December 2012

Active surveillance, follow-up for any suspect rabies exposures

PrEP

3 ID doses at 0, 7, 28 days

Administered in the school by municipal health officer and / or nurses

Direct medical costs included:

Cost of biologicals

Cost per shipment

Cost of consumables

Education

Adaptation of the rabies curriculum teacher's manual

The long term economic benefit of PrEP

Example of a pilot project in Philippines

To further explore the benefits of PrEP, projected costs of two hypothetical cohorts of children bitten by a dog were assessed, according to two scenarios:



El Nido cohort
n=3,894

Scenario 1, No PrEP

- Exposed children receive the standard of care for PEP (intradermal method (2-2-2-0-1))
- 15% of those children receive ERIG

Scenario 2, PrEP

- All the children benefit from the complete schedule of PrEP
- When exposed, children receive 2 booster doses on day 0 and 3
- No RIG administration

| | Year 1 | Year 5 | Year 10 |
|--------------------------------------|--------------------|----------|----------|
| Cumulative exposures | 99 | 495 | 990 |
| Cumulative costs scenario 1, No PrEP | \$7,600 | \$37,800 | \$75,700 |
| Cumulative costs scenario 2, PrEP | \$31,600 + \$1,800 | \$40,800 | \$49,900 |

Not a long term investment

- The most cost-effective strategy for preventing rabies in people is by eliminating rabies in dogs through vaccination¹
 - Vaccinating 70% of dog population prevents 99% of human cases²
- PrEP can be beneficial as a measure to temporarily protect specific groups
 - Economic benefits when targeted to high risk population since it reduces the PEP doses from 5 to 2 and it eliminates the need for RIG
 - Overall, it reduces cost per life-saved
 - When targeting specific populations
 - Roll out varying according to risk and access

1. WHO Expert Consultation on Rabies
2. Coleman and Dye, 1996

Critical points for PrEP

- → Identification of the high risk group of high importance
 - Questions to tackle:
 - Geographic area:
 - Rural / urban?
 - Access to vaccination centers?
 - Definition of the true incidence of exposures in such population?
 - Availability of state-of-the art post-exposure prophylaxis
- → Roll out /Implementation of PrEP
 - Questions to tackle:
 - Mass campaigns or associated with EPI?
 - Barriers to implementation of PrEP in the target population?
 - Major advocacy arguments?
 - ID administration?