



Economic Analysis of the 2002 WNV Epidemic in Louisiana

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Objectives

- Describe the costs of the epidemic
- Provide a framework for estimating expected benefits from prevention and control

Background

- **June to December 2002 WNV epidemic in LA**
 - **329 total cases**
 - ◆ **214 treated as inpatient**
 - ◆ **24 deceased**
- **Cases occurred in 41 parishes out of 64**

Background

(continued)

- **15 parishes had mosquito abatement and surveillance programs in 2002**
- **7 parishes had only mosquito abatement programs**

Cost of Epidemic

- **Indirect medical costs and productivity losses**
- **Direct medical costs**
 - **Inpatient**
 - **Outpatient**
- **Costs incurred by public health offices and other government agencies**
 - **Costs of LOPH**
 - **Costs of mosquito control**

Direct Medical Charges*

■ Charges for 21 inpatient cases	\$1,088,353
● Maximum charges per patient	\$242,609
● Minimum charges	\$2,019
● Average charges	\$51,826
■ Estimated total for 214 cases	\$11,090,800

***21 inpatient cases analyzed to date.**

Direct Costs of Illness

- **Cost-to-charge ratio for Louisiana is 0.51.**
- **Total economic costs for 214 inpatient cases = \$5.5 million**

Cost of Vector Control

- **\$5 million state reimbursement request for WNV vector control expenses from 93 entities**
- **Actual vector control costs higher**
 - **Reimbursement not requested for all incurred costs**
 - **In-kind payments not included**
 - **Expenses after August 23 not included**

Cost of Vector Control

(continued)

- Requested to total expenses ratio is 1 : 3.5 (estimated).
- \$17.5 million total expenses (estimated)

Louisiana OPH

- **\$885,914 (estimated) state WNV expenses, June-November 2002**
 - **\$585,914 basic operating expenses**
 - **\$166,000 contracts such as LSU vet. diagnostic lab, contract entomologist**
 - **\$134,000 laboratory**

Summary costs (provisional)

millions

■ Direct medical costs

- Inpatient

\$5.5

- Outpatient

to be determined

■ Indirect medical costs

to be determined

■ Public offices

- Mosquito control

\$17.5

- LOPH

\$0.9

Total

> \$24 million

Total per capita

> \$5.5



Inpatient Costs for the US, 2002

- Total WNV cases in US: 4007
- Assume 65% inpatient, \$26,431 per patient cost (LA example)
- Provisional estimates \$ 69 million WNV *inpatient* costs

Future Research

- **Expected benefits equal to the product of:**
 - **Probability of WN epidemic**
 - **% reduction in cases due to prevention and control**
 - **Cost of epidemics without prevention and control**

Conclusions

- Based on provisional data, *epidemic costs* in LA are over \$24 million
- Extrapolating to national level, only *direct costs for inpatient* treatment \$69 million
- Complete economic analysis under way
- Do costs of epidemic justify investments in development of therapeutics and vaccines?



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