

The Probo Koala crisis

starting Aug 19, 2006

Investigations on public health impacts

carried out by ENSP/ABR-Pharma
(Marsh – September, 2007)

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A very specific context (2006)

- Political, economical and social crisis in Côte d'Ivoire for several years, including war episodes
- Toxic sludge spills in Greater Abidjan, from August 19, 2006
 - *Perceptible by population* : **odor +++**
 - Acute exposure of hundreds of thousands people

Toxic sludge dumping sites

 Site où auraient été déposés des déchets toxiques appartenant au cargo "Probo-Koala"


Maison d'arrêt

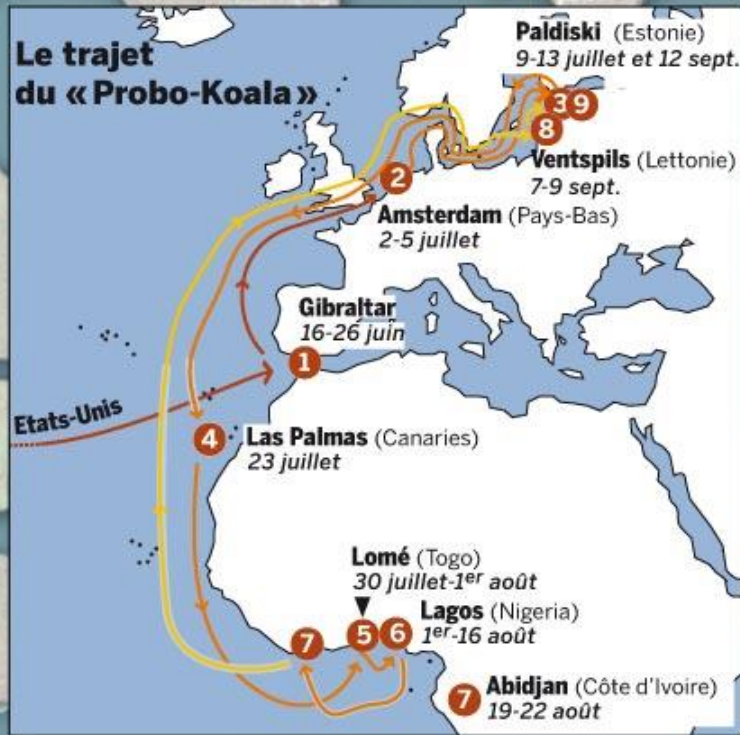

Akouédo


Cocody


Plateau


Marcory


Port de Vridi



What was known at the onset of investigations 1

- **Sludge chemical characterization**
 - From analyses in Amsterdam, July 2-5 2006
- *Aqueous phase*: **mercaptans** (methyl,); **H₂S**; **phenols** (2 methyl-, ethyl-, thiophenols); **2 methyl benzene, NaOH.**
- *Organic phase*: **alcanes, disulphurs**
- *Sludge composition may have evolved over time* due to manipulations on board during the Probo Koala cargo ship trip to Abidjan

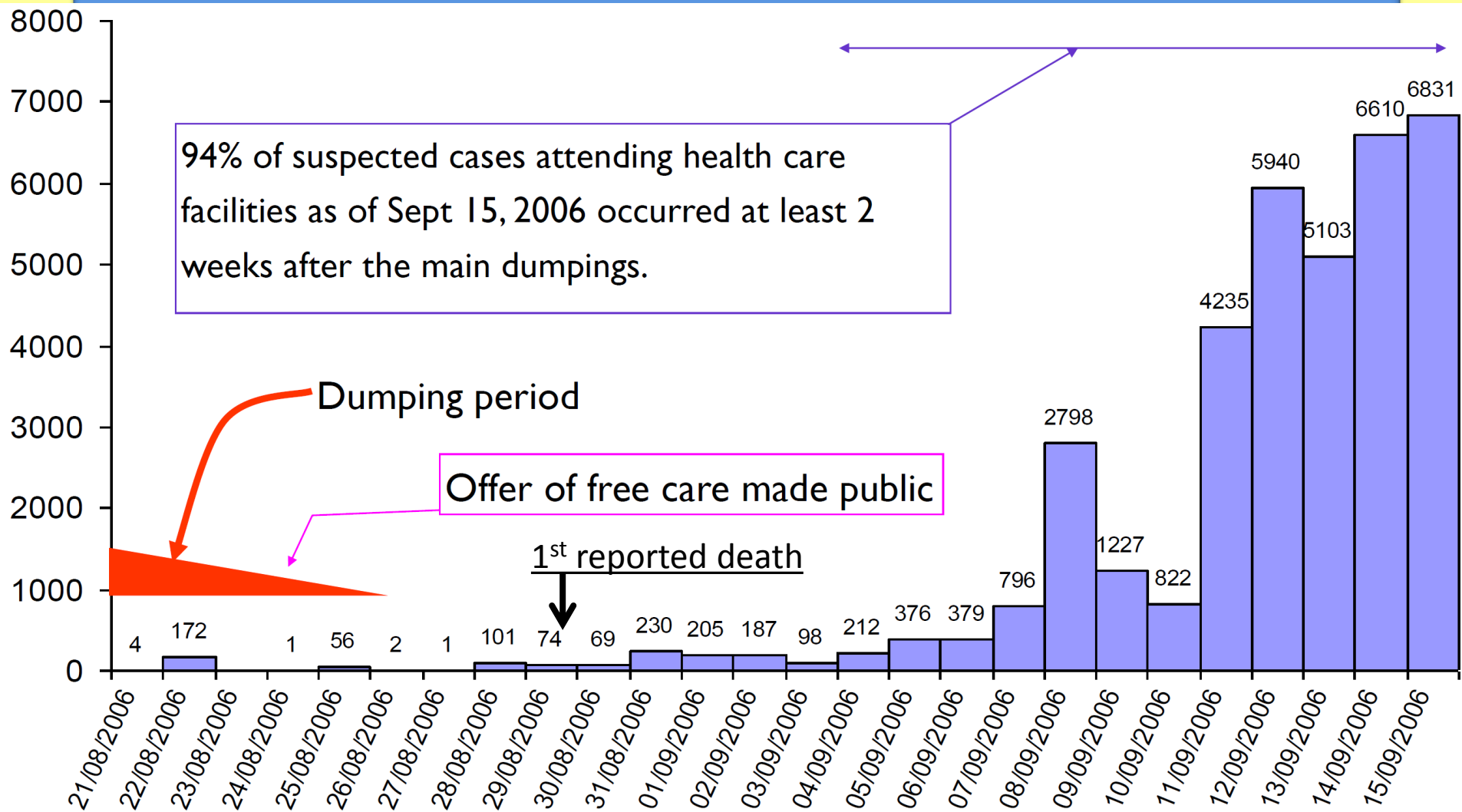
What was known at the onset of investigations 2

- Aug 20, 6 am: people in the vicinity of dumping sites start to complain, alerting authorities
- Aug 21: authorities organize a task force; samples taken from the cargo ship; media breaking news on the issue
- Aug 24: Health authorities' messages through mass media as for preventive/precaution behaviours, and *access to free examination and care in hospitals* for concerned people

Data collection

- Field visits (dumping sites)
- Chemical analyses
- Clinical/case forms
- Hospital records
- Primary health care registries
- Epidemiological studies (n=2, Nov-Dec 2006)
- Toxicological profiles
- Air dispersion modeling (H₂S, mercaptans)

Daily attendance to Abidjan hospitals



Health impact assessment

- 0.5 million exposed
- The time course of health events is compatible with an effect of acute and subchronic exposure to mercaptans (H₂S quickly disappeared)
- No death attributable to exposure (as said by clinicians, no autopsy report available), yet 16 claimed
- Low hospitalisation rate (<1%), 101 patients
 - Hospital records indicate diagnoses little related to exposure
- A specific attendees' demographic profile (little women; 34% attendees < 20 years old – this class makes 60% of the côte d'Ivoire population)
- Short and mid-term impact unclear

Conclusion : a reference scientific analysis?

- Overall impact unclear, 10 years after, because of inadequate follow-up
 - Appropriate follow-up methods (cohort studies) detailed by us
 - Cost of this follow-up over 10 years sums up at grossly 8,5 M€ (2007)
- Independance and transparency of assessments not ensured
 - Our report was kept confidential
- Partial information use by specific, often vested, interests
- Population (still?) convinced that many illnesses are related to exposure, and that this is concealed by authorities