The role of data screening and spontaneous reporting in the detection of an outbreak of falciparum malaria in the Dominican Republic by European clinical surveillance networks

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Objective
In November 2004 TropNetEurop and SIMPID, the associated European and German clinical networks for surveillance of imported infectious diseases, detected an outbreak of falciparum malaria in eastern tourist regions of the Dominican Republic, which triggered local control measures and international adaptation of prophylaxis recommendations. As the networks rely both on statistical data screening and spontaneous reporting to detect increased risks of infection in tourist countries, the outbreak presented an opportunity to review the effectiveness of both approaches to pick up rare disease events.

Methods
Statistical data screening – Standardized electronic surveillance data are routinely screened for notification increases unexplainable by chance variation. Signals generated by data screening trigger further investigations to clarify the outbreak suspicion.
Spontaneous reporting – Network members distribute informal reports about unusual observations via the networks' mailing lists inquiring for similar observations.

Results
On 18 Nov, after two years without malaria reports from the Dominican Republic, one of the sentinels issued a spontaneous report about a patient returning from Punta Cana with falciparum malaria. Consequently, another 10 informal reports, including 4 from outside the networks, were received the following two weeks, and ProMed suggested adaptation of prophylaxis recommendations on 27 Nov. Formal notifications were more delayed and less frequent, therefore statistical data screening yielded no signal before 3 Dec.

Conclusion
If the objective is early detection of rare disease events, spontaneous reporting by clinical sentinels is more effective than statistical data screening. Clinical surveillance networks are therefore a valuable addition to state-run public health surveillance.