**Suggested format of a checklist to be used for the design of an enhanced surveillance system**

<table>
<thead>
<tr>
<th>Feature of existing system</th>
<th>Feature of enhanced system</th>
<th>Means of amendment</th>
<th>Is it included in the training program?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Characteristics of decision contexts, to be reported</td>
<td>No change</td>
<td>None</td>
<td>Yes</td>
</tr>
<tr>
<td>Range of data to be included in early report</td>
<td>Captured</td>
<td>No personal identification, simple report of cases and diagnostic category</td>
<td>Yes</td>
</tr>
<tr>
<td>System of reporting diseases</td>
<td>Computerized with annexes for all implications</td>
<td>Completion of equipment and preparation of the computer program</td>
<td>Yes</td>
</tr>
<tr>
<td>Reports on individual cases</td>
<td>Initial contact with the patient. Reporting of indications for investigation.</td>
<td>Preparation of cases for investigating these cases with other data surveillance.</td>
<td>Yes, with focus on the resolution of data from other sources.</td>
</tr>
</tbody>
</table>

**PRODUCTS**

The following products have been developed:
- A toolbox of core surveillance capacities for mass gatherings
- Training module “Surveillance of infectious diseases at mass gatherings”

**OUTLOOK**

Post-event assessments are necessary for future applications of enhanced surveillance systems. For effective assessments, contacts should be established between the WHO (World Health Organization), the ECDC (European Centre for Disease Prevention and Control), and the health departments of the respective countries.

**CONTACT**

Andrzej Zieliński, azielinski@pzh.gov.pl

Barbara Joanna Pawlak, bpawlak@pzh.gov.pl

National Institute of Public Health - National Institute of Hygiene (www.pzh.gov.pl)

24, Chocimska Street, 00-791 Warsaw, Poland
OBJECTIVE

During the last decades, enhanced surveillance of infectious diseases has been implemented for mass gatherings at sport or religious events. Despite the widely recognized importance of early and highly sensitive detection of health events at mass gatherings, enhanced surveillance systems are hesitantly adopted.

The REACT work package 4 aims to develop a toolbox of core capacities for enhanced surveillance during mass gatherings and to design a training module on the surveillance of infectious diseases at mass gatherings.

METHODOLOGY

The following methods were used:

- A systematic review of the literature from all relevant public health databases
- A structured assessment of checklists used for the preparation of mass events
- Collection of expert experience and opinions (questionnaires by mail, telephone interviews)
- Expert consultations
- Pilot training in Poland with planners/implementers of the UEFA EURO 2012

STATE OF THE ART

The presumption that there is a special “mass gathering effect” leading to increased incidences of infectious diseases is too general and needs to be specified. Reports of epidemics related to mass gatherings are mostly due to serious breaches of sanitary regimens during food preparation or due to poor sanitary conditions at the venue of the event.

The literature covering health issues related to mass gatherings steadily increased over last decades with special attention to the transmission of infectious diseases and potential bioterrorist attacks in particular. Almost all of the surveillance systems analyzed can detect large outbreaks. Enhancement of an existing surveillance system for improved timeliness (e.g.,?) or the adoption of extra sources of information (e.g., at the 2006 FIFA World Cup in Germany) could serve as examples.

MAJOR FINDINGS AND CONCLUSIONS

Based on the results of the systematic literature review and expert experience, an enhanced risk assessment tool for mass gathering events is recommended. The risk assessment integrates previous occurrences of infectious disease incidence during mass gatherings, the epidemiological situation at the location of the event in the host country, as well as in the countries of origin of the visitors.

Other elements of a risk assessment are the appraisal of the local infrastructure and the particular characteristics of the mass gathering event.

Based on the information collected, an enhanced surveillance system can be designed. It may be further adapted during the mass gathering if necessary.

A TOOL KIT FOR PLANNERS AND IMPLEMENTERS

The toolkit allows to:
- assess the risk
- assess the surveillance system in place
- set priorities and allocate resources efficiently!

RISK ASSESSMENT

- What are the characteristics of the mass gathering?
- What information is available on the local, regional, national epidemiological situation?
- What infectious diseases might occur?
- What diseases might additionally be imported?
- What are the priority diseases?

SYSTEM ASSESSMENT

- Description and attributes of the surveillance system
- Comparison with standards for specific diseases

GAP ANALYSIS AND DECISION-MAKING

- Define gaps between existing surveillance system and needs identified in risk and system assessment
- Compare surveillance system in place versus optimal surveillance system
- Prioritize risks
- Assess resources