Attributes of surveillance systems

(...We can’t have it all!)

Attributes of surveillance systems

**Quantitative**
1. Sensitivity
2. Positive predictive value PPV
3. Representativeness
4. Timeliness

**Qualitative**
5. Simplicity
6. flexibility
7. acceptability
8. stability
Detect epidemics or outbreaks

• Higher sensitivity improves detection
• High PPV
• Good representativeness improves detection
• Rapid timeliness important!

Ascertain in a timely way cases that are of public health importance

• Very high sensitivity important
• Probable cases can have low PPV
• Confirmed cases high PPV
• Good representativeness is important
• Rapid timeliness important

Detect trends in disease or characteristics of cases

• Stable sensitivity important
• High PPV important
• Stable representativeness important
• Timeliness: appropriate to the character of disease and its prevention

Estimate disease burden

• High sensitivity important
• High PPV important
• Good representativeness important
• Timeliness: appropriate to the character of disease and its prevention
Support the evaluation of primary and secondary preventive measures

- Stable sensitivity important
- High PPV important
- Stable representativeness important
- Appropriate to the character of disease and its prevention

Monitor effects in clinical practice

- High sensitivity contributes to better understanding of current practice
- High PPV important
- Good representativeness important
- Timeliness: appropriate to the character of disease and its prevention

Facilitate research in support of prevention or control

- High sensitivity contributes to quality of research
- High PPV important
- Good representativeness improves research
- Timeliness: appropriate to the character of the disease

Conclusions

- Characteristics of a system should be tailored according to objective
- Qualitative attributes are probably more important than quantitative ones in making a surveillance system work!
- Performance of a surveillance system is assessed by quantitative attributes
- Having all stakeholders actively involved in the system since the beginning is one of the warranties for success
Conclusion

Unless local surveillance is strengthened, international surveillance will never reach the quality we aim for!

Surveillance functions

- Magnitude of health problem
- Understand natural history of a disease
- Detect outbreaks/epidemics
- Document distribution and spread of a health event
- Etiologic hypothesis testing
- Evaluate control strategies
- Monitor changes in infectious agents
- Monitor isolation activities
- Detect changes in health practice
- Identify research needs and facilitate epidemiological and laboratory research
- Planning for future interventions

Thank you!