

Definition of surveillance

- *Surveillance* is the systematic **collection, analysis** and **interpretation** of outcome specific data
- for use in planning, implementation and evaluation of health practice and
- includes the timely **dissemination** to those who can undertake effective prevention and control **actions.**

Uses of Surveillance

- Quantitative estimates of the magnitude of a health problem
- Portrayal of the natural history of disease
- Detection of epidemics
- Documentation of the distribution & spread of a health event
- Facilitating epidemiologic and basic and applied research
- Testing of hypotheses
- Evaluation of control and prevention measures
- Monitoring of changes in infectious agents
- Monitoring of isolation activities
- Detection of changes in health practice
- Planning

Question 2. Surveillance

- Why should we conduct surveillance?
- What do we do based on the results?
- What outcomes do we want?
- Are we achieving these outcomes?

Why should we conduct surveillance?

- Ministry of health uses ARO surveillance for planning and policy development purposes
 - guide provincial strategies and operations of the health care system,
 - increase prevention activities,
 - minimize risk to citizens and mitigate transmission,
 - efficiently use health care resources.

What do we do based on the results?

- Actions include:
 - detection and identification of antibiotic resistant organisms residing or being introduced into the province,
 - detection of clusters or ongoing transmission,
 - evaluating the success of prevention or control measures,
 - determining conditions that may stimulate or decrease the development of antimicrobial resistance,
 - providing quantitative estimates of the magnitude and impact of ARO's .
 - Modify policy or protocols to decrease incidence and transmission of ARO's

Further examples of policy changes due to ARO surveillance

- Hospital design and construction (how many hand washing sinks, where etc.),
- Professional competence (adherence to infection control protocols),
- Veterinary and physician standard of practice (overprescribing of antibiotics),
- Emergency department and hospital screening (NDM-1 screening patients from countries known to be high incidence.)
- Provincial and federal legislation and regulations (allowing antibiotics to be imported for personal use.),
- Patient safety (increased length of stay, poorer outcomes),
- Agricultural standards, regulations and practices , (international agreements forbidding antibiotic in products, use of antibiotics to prevent disease in intensive livestock operations, organic practices)

What outcomes do we want?

- Decreased selection and formation of antibiotic resistant organisms, locally and globally
- Decreased infections with antibiotic organisms
- Early detection and eradication of antibiotic organisms
- Rapid outbreak detection and control of ARO's
- Increased numbers of drugs in development against ARO's

Are we achieving these outcomes?

- The surveillance for infection prevention and control in acute care and continuing care settings (patient safety, reducing health care costs) is relatively comprehensive and responsive but would still benefit from increased standardization and innovation.
- However that related to reducing the creation of antibiotic resistance due to human and animal use of antibiotics (antibiotic stewardship) is still complicated, fragmented and conducted with fewer resources.