National Microbiology Laboratory (NML) Science Plan 2024–2027

MISSION AREAS AND GOALS

Antimicrobial Resistance

1. Advance antimicrobial resistance (AMR) monitoring through innovative diagnostic testing and enhanced surveillance methods.
2. Continue to modernize laboratory-based AMR surveillance using genomics.
3. Expand the functionality of laboratory-based surveillance programs and networks to include new priority pathogens or geographic areas.
4. Compile, analyse and report on AMR trends using leading-edge technologies to improve understanding and enable planning and response by other parties.
5. Understand and assess transmission pathways from a One Health perspective to support public health interventions.

Sexually Transmitted and Bloodborne Infections

1. Develop and evaluate diagnostic technologies, ranging from low-barrier methods to complex laboratory-based methodologies, to effectively meet the needs of health systems in reducing the burden of sexually transmitted and bloodborne infections (STBBIs).
2. Identify and address research, testing and surveillance gaps in emerging and re-emerging STBBIs.
3. Enable laboratory data integration and advanced data analytics to better inform evidence-based decision making.

Climate-Sensitive Infectious Diseases

1. Develop new and enhance existing methods to improve detection and diagnosis of climate-sensitive infectious diseases.
2. Advance laboratory-based surveillance of climate-sensitive infectious diseases through the integration of genomic methods.
3. Assess the risk of climate-sensitive infectious diseases and identify specific populations and areas at risk to inform program actions and emergency preparedness and response.
4. Study the ecology of climate-sensitive pathogens from a One Health perspective, to understand how the associated risks could change based on climate forecasts.

Emerging and Novel Pathogens

1. Pioneer innovative testing methodologies to increase laboratory capability for identification, characterization and surveillance of emerging and novel pathogens.
2. Strategically prioritize emerging pathogens to guide research, development and preparedness through a risk management lens.
3. Lead and be a partner of choice for the research and development to better understand transmission dynamics and pathogenicity of priority pathogens, to inform public health interventions and develop medical countermeasures.
4. Foster leadership and collaboration by creating and championing standardized and efficient approaches for reference diagnostic testing, quality oversight, and preparedness.
5. Leverage national and international partnerships and collaboration to strengthen domestic and global health security.

NML Core Functions

- Diagnostic and Reference Testing
- Laboratory-Based Infectious Disease Surveillance
- Emergency Preparedness and Response
- Research
- Leadership, Training, Network and Capacity Development
- Laboratory Science Support Services

Public Health Agency of Canada
Agence de la santé publique du Canada

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 | Cat.: HP60-13/2024E-PDF | ISBN: 978-0-660-71557-5 | Pub.: 240089