

# The Salzburg Statement on Metrics for One Health Surveillance

**We live in a complex, interconnected world with increasing risk of emerging infections. It has been estimated that the next pandemic threat could result in 50 million human deaths and the loss of 5% of the world's economy<sup>1</sup>.**

Looking *everywhere* for a threat *anywhere* is a shared global challenge. Finding outbreaks faster is critical to reduce illness, death, and economic loss from epidemics or pandemics. Speed saves lives in all aspects of disease surveillance, including detection, verification, notification, and intervention. Every day that an outbreak continues to spread unabated or unrecognized, additional infections result.

## THE CASE FOR A ONE HEALTH APPROACH

One Health recognizes that the health of humans, animals, and the environment are interconnected.

Three out of four emerging infectious diseases jump from animals to humans, threatening the health of both.

Climate change and other environmental factors exacerbate disease emergence and spread.

Significant delays in outbreak prevention, detection, and response lead to needless morbidity, mortality, and economic loss.

A multisectoral approach to prediction and prevention of disease is essential to monitor risk factors across the spectrum of environment, animals, and human health.

1. *A World At Risk: Annual report on global preparedness for health emergencies*. Global Preparedness Monitoring Board, 2019.

## CALL TO ACTION

Preparedness for epidemics of infectious diseases in animals and humans must be recognized as a public good necessary for global health security. A rapid, concerted shift in disease surveillance practices is needed to move from a single sector-based approach to a One Health multi-sectoral approach.

Ending Pandemics and the participants of Salzburg Global Seminar's program on *Finding Outbreaks Faster: Metrics for One Health Surveillance* have developed **Timeliness Metrics** to monitor progress in outbreak prevention, detection, and response to support continuous performance improvement. We hope to inspire action and drive collaboration among One Health sectors through routine implementation of these Timeliness Metrics across the world.

We call on scientists, policy makers, advocates, community leaders, One Health practitioners, the private sector, and governments to:

- Initiate and support the transformation towards One Health surveillance.
- Promote the sharing of real-time surveillance data across sectors.
- Expand the development and utilization of early warning and alert systems for prediction and prevention of outbreaks.
- Use the Timeliness Metrics to monitor local, national, and global progress in outbreak prevention, detection, and response.
- Incorporate the Timeliness Metrics into public health, medical, and veterinary curricula and global workforce development training.
- Use the Timeliness Metrics to monitor the impact of investments in epidemic and pandemic preparedness.

We commit to shaping a future where predicting and preventing disease outbreaks, both human and animal, becomes the norm. Environmental monitoring, satellite imagery, and greater understanding of climate impacts on the emergence and spread of pathogens, can significantly contribute to this goal.

## IMPLEMENTING THE OUTBREAK TIMELINESS METRICS

We appreciate that outbreaks will continue to challenge our best preparedness efforts. These Timeliness Metrics provide a structured framework to push ourselves to detect, verify, report, and respond to outbreaks faster by providing benchmarks to continually improve upon. We urge countries and their partners to use the Ending Pandemics Outbreak Milestones and Timeliness Metrics as standardized measures to consistently monitor progress towards finding outbreaks faster, translating into lives saved and livelihoods preserved. The final metric – *After Action Reviews* – is a milestone to encourage timely convening of relevant stakeholders to initiate or strengthen One Health coordination, improve detection and response efforts, and enable prediction and prevention of the next outbreak.

## Timeliness Metrics



Timeliness metrics are the time intervals measured between two respective outbreak milestones\*. Each milestone represents the date of key outbreak activities. Milestones can apply to individual sectors or to a coordinated One Health approach, integrating environmental, animal, and human health.

### OUTBREAK MILESTONES

<b>PREDICT</b>	<b>PREVENT</b>
Date a reliable and valid predictive alert of a potential outbreak is available [e.g. increased rainfall leading to greater density of mosquitos capable of disease transmission]	Date enhanced surveillance or other intervention is initiated in response to a predictive alert [e.g. mass vaccination in livestock; mosquito abatement]
<b>DETECT</b>	<b>NOTIFY</b>
Date symptom onset, death, or other evidence of pathogen circulation is observed or suspected in human(s) or animal(s)	Date an outbreak in humans or animals is officially reported to relevant authorities. [e.g. local to national; national to international; cross-sector]
<b>VERIFY</b>	<b>DIAGNOSTIC TEST / LAB CONFIRMATION</b>
Date outbreak is confirmed by field investigation or other valid method	Date outbreak is confirmed by diagnostic or laboratory test in an epidemiologically-linked human or animal
<b>RESPOND</b>	<b>PUBLIC COMMUNICATION</b>
Date an intervention to control or manage the outbreak is initiated by a responsible authority [e.g. mass vaccination; quarantine]	Date of official release of information to the public by a responsible authority
<b>OUTBREAK START</b>	<b>OUTBREAK END</b>
Date symptom onset or death occurs in the earliest epidemiologically-linked human or animal [most often identified retrospectively or estimated based on available evidence]	Date outbreak is declared closed by a responsible authority
<b>AFTER ACTION REVIEW**</b>	
Date after action review is jointly conducted by relevant One Health authorities.	

\*The sequence of the milestones may vary by outbreak. In some cases, a single action may represent more than one milestone. For example, the date of lab confirmation may be the same as the date of verification. Similarly, public communication may be the first intervention in response to an outbreak. The definition of an outbreak may vary by disease, geography, or sector.

\*\*The After Action Review milestone is included to inspire the necessary collaborations among sectors for operationalizing One Health.