Enhancing the engagement programme for New Zealand's animal health exotic pest and disease notification system

The Ministry for Primary Industries (MPI)'s exotic pest and disease notification system is one of New Zealand's main animal health surveillance systems for the early detection of exotic pests and diseases. This system helps underpin New Zealand's disease-status statements to the World Organisation for Animal Health (OIE) and trading partners, thereby enabling exports of our primary produce to high-value markets. It also meets the requirements of an early-warning system for the detection of new diseases by the OIE. The notification system consists of multiple components, as described by Tana (2014):

- a communication programme that encourages timely notification (referred to as the "stakeholder engagement programme" in this article);
- a 24/7 notification channel (the exotic pest and disease hotline);
- MPI's veterinary Incursion Investigators (for investigating notifications);
- a network of Initial Investigating Veterinarians throughout New Zealand (to rapidly assist with investigations);
- exotic pest and disease diagnostic laboratory capability;
- a data management system; and
- a legal requirement for all New Zealanders to report suspected incursions (sections 44 and 46 of the Biosecurity Act 1993).

Recently MPI has undertaken a project to formalise and enhance the stakeholder engagement programme. The objectives of this project are to:

- identify key potential notifiers and develop evidence-based methods to encourage timely and accurate notifications;
- develop systems to evaluate stakeholder engagement and to monitor notification patterns; and
- identify collaboration opportunities with key animal health stakeholders.

Once the objectives of the project are initially met, work to improve stakeholder engagement will continue under an ongoing engagement programme. This project aligns with Biosecurity 2025 Strategic Direction 1: A team of 4.7 million. It also aligns with the OIE Terrestrial Animal Health Code, which states that communication to stakeholders requires strategic and operational planning, adequate resourcing and management, and periodic review (OIE, 2019). The scope of the current project is limited to enhancing the stakeholder engagement programme, but will consider other components of the notification system if they impact on engagement (e.g. performance of the notification channel) or the ability to measure engagement (e.g. the data management system).

Methodology

The first step of the project is an internal review of the current engagement programme. This review aims to develop methods for assessing stakeholder engagement, collate MPI's notification engagement activities, establish a baseline of current engagement levels across stakeholders, and recommend future work. This review has been conducted in conjunction with a review of the wider animal health surveillance programmes (Phiri & Earl, 2020).

Assessing engagement in the notification system is challenging. Successful engagement means that all key stakeholders are being vigilant for exotic pests and diseases and are aware of the

Table 1: Attributes used to evaluate stakeholder engagement with the Animal Exotic Pest and Disease Notification system, and their definitions

Attribute	Definition
1. Flexibility	The ability of engagement programme to adapt and respond to a change in the risk profile of an exotic organism.
2. Performance indicators and evaluation	Whether the engagement programme is regularly assessed against defined performance indicators, and whether actions are taken to address weaknesses.
3. Data management and storage	How well the data management system enables monitoring, analysis and reporting of notification data.
4. Resource availability	Availability of personnel and finance to effectively and regularly carry out engagement activities, with defined roles and responsibilities.
5. Appropriate and well-functioning networks*	How well animal health networks are understood and targeted, and the effectiveness of animal health communication within these networks.
6. Acceptability and engagement	Vigilance for exotic disease, and awareness and willingness to participate in the notification system amongst identified notifiers.
7. Representativeness and bias	Whether notifications are representative of the animal population at risk (geographically, temporally, and species/sectors).
8. Positive predictive value	The proportion of notifications from a defined notifier group that are investigated, are positive, or initiate a response. This attribute estimates notification quality.
9. Timeliness	The length of time between onset of clinical signs in New Zealand and notification to MPI.
10. External communication and dissemination	The support, understanding and satisfaction of communication of the notification system among animal health organisations, and current collaboration of engagement activities.
11. Internal communication	The support, understanding and satisfaction of communication of the notification system within MPI.
12. Utility	How well the engagement programme meets its objectives and describes the changes that have been made to improve the programme.

* Attribute created in addition to those defined within the Surveillance Evaluation Framework (SurF): Muellner et al, 2018

appropriate reporting mechanism. It is also important to identify and address any barriers to stakeholders participating in the system. The analysis cannot be based on notification data alone, as a lack of notifications may be due to a lack of unexpected disease events in the specified population during a certain time period. It is also difficult to research actual behaviour regarding the vigilance for, and actions taken following suspicion of, an exotic disease. The Surveillance Evaluation Framework (SurF) (Muellner et al., 2018) was therefore chosen to provide a comprehensive assessment of the engagement programme.

Ruminant sectors (cattle, deer, goats, sheep) were selected to initially test the SurF methodology for assessing the engagement programme. Eleven attributes were selected from the SurF framework to provide a quantitative and qualitative analysis (**Table 1**). A further attribute, "Appropriate and well-functioning networks", was created in addition to the SurF attributes. A number of attributes were amended to better fit the objectives and design of the engagement programme. Stakeholder consultation as described in Phiri & Earl (2020) was also undertaken to inform the "External communication and dissemination" and "Internal communication" SurF attributes.

Results from the evaluation work thus far have been used by MPI's Surveillance and Incursion Investigation Animal Health (SIIAH) team to help guide an enhanced engagement programme plan for 2020–2021.

Work conducted to date
To date the review has included:

- collating current engagement programme activities;
- stakeholder analyses;
- an analysis of previous MPI stakeholder surveys and relevant literature;
- examining the current notification and investigation data; and
- carrying out stakeholder consultation.

The SIIAH team conducts a number of activities each year to engage with veterinarians, commercial diagnostic laboratories, the science community and others. As a result, stakeholder surveys have shown a high degree of awareness and willingness among

private veterinarians and veterinary pathologists to notify suspected exotic pests and diseases to MPI. A hotline was also reported to be a preferred method of reporting among these stakeholders, rather than via email, an online form or a smartphone app. Survey work and the literature has demonstrated that farmers have a high degree of trust in veterinarians when animal health is concerned. However, livestock farmers' animal health network has likely become more complex in recent years, and more work is required on these networks to ensure all animal health professionals (e.g. scanning service providers, feed advisers and veterinary technicians) are included in the engagement programme. Further research on farmer behaviour is also intended with regard to animal health observation and monitoring, and thresholds of disease before contacting animal health professionals.

The MPI S&II group's notification and investigation database design has until recently limited the assessment of the quantitative SurF attributes, and work to data-mine its contents is ongoing. While the database captured detailed information of notifications and investigations, the review identified several areas where database improvements could enhance the SIIAH team's ability to analyse notifications and investigation data. These areas have been incorporated into the design of a new notification and investigation database within MPI's Surveillance Information Management System (SIMS). This new database also allows the creation of real-time reports including graphs and maps, which will enhance SIIAH's ability to monitor and communicate notification data.

Stakeholder consultation is considered essential to meet the objectives of the project, particularly to identify further opportunities for collaboration. Stakeholder consultation was conducted in 12 workshops including 30 agencies across the full animal health sector, as well as several MPI animal health teams. The methodology for stakeholder consultation is further described in Phiri & Earl (2020). Almost all consulted stakeholders were aware and supportive of the exotic pest and disease hotline and its role in the early detection system. They identified several strengths of the notification system, including existence

of the IIV system, collaboration between their organisation and SIIAH staff for investigations and research, commercial laboratory expertise and the breadth of testing conducted during investigations. Stakeholder discussions were useful to identify potential barriers to engagement, opportunities for enhancing the notification system, and improvements to communicating notification data outputs that will be further considered. There was high enthusiasm among external stakeholders for increased collaboration between MPI and their organisations to enhance notifications. One example of an immediate action undertaken as a result of this consultation was republishing the quarterly equine diagnostic and investigation summaries from *Surveillance* in *Equine Veterinary Practitioner* (NZVA special interest branch).

Next steps
The initial review work has demonstrated that SurF provides a comprehensive framework for assessing engagement in the notification system. While the internal review is ongoing, work conducted to date has provided direction for activities in the stakeholder engagement programme for 2020–2021. Priority activities include:

- identifying and initiating effective strategies for engaging with non-veterinary animal health professionals such as veterinary technicians and farm consultants;
- maintaining the current high levels of engagement with private and specialist veterinarians while testing new engagement methods to support timely notifications. This may include providing more guidance for when to notify, and promoting the collaborative approach to investigations between the MPI SIIAH and private veterinarians (see, for example, article on page 4);
- initiating research among farmers to better understand their animal health concerns, and their behaviour during animal health events;
- enhancing collaboration with MPI's other animal health teams (e.g. Animal Trade, Readiness and Response, and Welfare) and relevant animal health organisations; and
- developing automated reports in SIMS to monitor notification and

investigation data, with summaries provided in the Surveillance Annual Report.

Further work includes expanding work to all animal health sectors, ongoing monitoring of notification data, and a programme of regular SurF reviews. These will continue to inform the development of the notification system's engagement programme.

References

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