

## Opportunistic approaches to threat reduction efforts in resource-limited countries

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### Objective

We describe approaches to the evaluation of threat reduction efforts in resource-limited countries. Specifically, we present an opportunistic approach to measure the success of efforts to improve on-farm biosecurity in Uzbekistan, which should lead to a reduction of disease transmission between animals and holdings, and to humans for zoonotic conditions.

### Introduction

The Biological Threat Reduction Program (BTRP) of the U.S. Defense Threat Reduction Agency (DTRA) delivers interventions to enhance surveillance of especially dangerous pathogens of both humans and animals within countries of the former Soviet Union. The program targets the different stages at which threats or their impact can be reduced, for example, via (i) the reduction of exposure to threats or (ii) measures for the containment of the threat.

The program delivers training on surveillance-related subjects through regular events attended by representatives of the Ministry of Agriculture of Uzbekistan (UZ). This provides an opportunity to capture data and conduct simple interventions on specific subjects amenable to basic evaluation. Given the sensitive nature of pathogen-specific data, we focus on non-disease-specific interventions leading to the reduction of exposure to and release of any given hazard. Here, we present an opportunistic approach for capturing data, at no additional cost, to assess (i) baseline awareness of on-farm biosecurity measures among UZ veterinary officials and (ii) the impact of training on their awareness of biosecurity. We also discuss the conceptual design of a study to assess on-farm biosecurity practices in UZ.

### Methods

We monitor four indicators to assess the effects of training (I): (i) reaction to training measured through structured feedback forms (FF); (ii) learning measured through pre- and posttraining tests; (iii) impact on the organization (i.e., how much the organizational practices change as a result of the trainings provided, measured, for example, through specific FFs); and (iv) return on investment (ROI), for which we are devising proxy measures to assess the improvement of traditional surveillance attributes (e.g., sensitivity). Here, we focus on impact. Specifically relating to biosecurity on farm, we aim to assess the impact at the training events through interactive presentations that allow the elicitation of trainees' views on what are the most common biosecurity breaches in their regions of origin, the measures they recommend and the barriers that prevent their implementation. At the end of the session, trainees discuss the

most common biosecurity breaches to produce a check list that they can use the next time they visit farms.

### Results

Collection of data at the training events is planned to start during the summer of 2011. We will present results of the data captured at the training events from that period onward. This will provide a baseline of biosecurity awareness within the surveillance workforce and suggested check lists for on-farm biosecurity assessments.

### Conclusions

An on-farm assessment to identify biosecurity breaches against the check list developed at the trainings can be conducted during the visits by officials to farms as part of their regular duties. This will not require significant additional resources. A record of the number of breaches is made for every farm. This constitutes the baseline biosecurity status of the farm prior to the intervention. The intervention would be in the form of advice from the visiting official and the provision of a limited amount of materials to support the implementation of biosecurity measures (e.g., poster with biosecurity messages, log book, etc.). Later visits to the farm by the official will aim to record the number of breaches and allow comparisons with the baseline. Results from this study could be taken as a proxy measure of the ROI from the training efforts.

The model of opportunistic data collection at trainings can be extended to advise other nonsensitive areas, such as some of the technical attributes of the surveillance system (timeliness, etc.). Other extensions are possible by means of expanding generic frameworks, like the one discussed here, into disease-specific ones either to assess biosecurity or the risk pathways to the introduction of a pathogen into the country, a region or a farm.

### Keywords

Especially dangerous pathogens; threat reduction; effect of training; biosecurity; resource-poor countries

### Reference

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