

*An electronic disease surveillance solution used by the Peruvian military and in a multi-country deployment in Latin America.*

## Customer Profile

The Peruvian Armed Forces maintains hundreds of health facilities, including infirmaries, training facilities, ports, and other bases across the country. Crowded living conditions and challenges to maintaining hygiene contribute to outbreaks of respiratory and diarrheal diseases among their personnel. The tropical environment poses additional risks of malaria, yellow fever, dengue, and other vector-borne diseases. Outbreaks of such diseases can significantly affect the Peruvian Navy's ability to execute missions (Chretien et al, 2007).

## Situation and Challenges

Before 2002, medical officers recorded diseases targeted for surveillance in paper reports that were mailed each month to the central naval medical office. "Previously you couldn't transmit data and therefore couldn't administer data," said Dr. Luis Botton, IT Director at the District Level within the Health System. Because of delays inherent in this system, surveillance data often did not reach the central office until outbreaks were far along or over. When reports had reached the central office more rapidly, timely public health action might not have been taken because the Navy lacked an information system to support managing, analyzing, and interpreting the data. The cost of delayed outbreak response was great: the Peruvian Navy spent substantial amounts of money evacuating patients to the central hospital and treating patients with severe disease.

## Our Solution

Alerta allows real-time data transmission via the internet or any telephone. Beginning with 11 reporting Navy health facilities the surveillance system has since expanded to more than 200 reporting units covering 97.5% of the Peruvian Navy medical beneficiary population and some communities located in remote areas in the Amazon basin and the Andes.

In three years of use, 82,225 health-related events were reported, timeliness is around 90%, error rate decreased from 0.12 to 0.02 per report, and more than 34 outbreaks were identified by Alerta. Moreover a new culture of disease surveillance has led to increased use of health information for decision-making and operations research that has led to better institutional guidelines and dozens of papers being published about the Alerta system.

## Benefits

- **Immediate Reporting:** The NAMRID system makes data available to all levels the moment it's reported. The system can even be set up so that alerts (emails or text messages) can be automatically triggered in the event of an outbreak.
- **Low Operating Costs:** The Alerta system required 40 percent lower costs of operations than the traditional paper system.
- **More Effective Health Interventions:** With more information coming in from the field, medical decision makers can react to outbreaks as they happen, before situations get out of hand.

## Results

- During a Green alert after flooding, health staff was able to submit reports on a daily basis to the Ministry of Health.
- 76 health facilities have been connected to the voice portal and have been able to submit 4,269 reports and 28,296 cases electronically.
- Designated health authorities have received immediate notifications of suspected cholera, Bartonellosis (a vector born disease of the Andean region), other diseases, and local disasters.

## Latin America Roll Out

Based on outstanding results in Peru, the U.S. Naval Medical Research Center Detachment (NMRCD) based in Lima, has agreed to assist a number of other countries in adopting the solution. So far, the solution is operational in Panama, and Ecuador and is configured to be used in Colombia and Paraguay.

Using such user friendly and cost-effective solutions could help to easily build regional online disease surveillance systems that will help all the countries and the region itself, to face major outbreaks and pandemics in a better way. By saving time from current routinary duties that are handled by Alerta, health officers will reduce their workload and would be able to analyze and respond by sharing same procedures, codes, protocols and best practices to address the increasing issues in global public health.

For more information, visit: [www.voxiva.com](http://www.voxiva.com)

