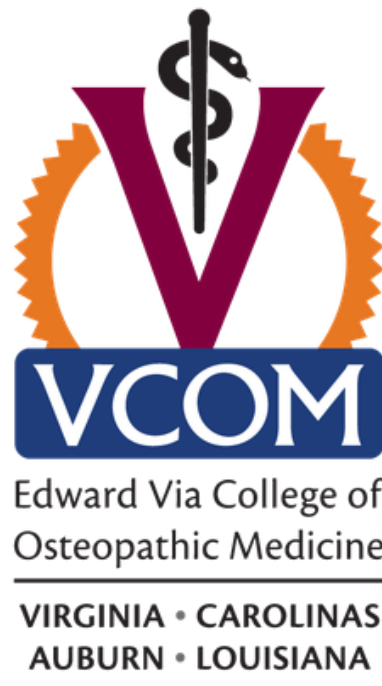


Warfighter Medical Readiness and Deployment Dashboard

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Introduction and Objectives

Military bases are prime environments for the high exposure and rapid spread of infectious diseases, which can result in significant operational disruption for troops. The Warfighter Medical Readiness (WMR) Dashboard is an advanced solution for Department of War syndromic surveillance that provides real-time, actionable intelligence to military bases. The temporal and geographic distribution of disease status is reported and forecasted using data from the Via Learning Management System (VLMS). To date, VLMS contains over 7 million entries from 11,872 locations over 7 years.

The WMR dashboard is an ecosystem for disease detection that provides options to overlay real-time metrics, including weather, biohazard information, VLMS clinical sites, military bases, and additional primary and secondary surveillance sources.

Methods

VLMS captures 1,300 medical students logging 3,000 daily clinical encounters via ICD-10 & HCPCS diagnostic and procedural codes, basic patient demographics, geolocation, temporal data, and WHO drug codes. The data is summarized into visualizations, table outputs, and maps within a single WMR dashboard accessible via a URL, providing real-time alert levels to the base medical command. The Surveillance Alert Tab (Figure 1) is intended to be a simplistic snapshot of current threat levels at bi-weekly time intervals. This tab contains a WMR Threat level reference, and the average count of a specific illness for the current week. The current week's individual disease counts per day with their individual threat level is summarized in a graphic display. The WMR Proximity Warning Zone Map (Figure 2-4) shows military bases within a calculated proximity from various detected influxes. Military Bases will receive warning alerts based on their geographic warning level. A report tab (Figure 5-6) outputs specific locations, military bases, counties, and disease counts based on anomaly detection and influxes of specific illnesses.

Warfighter Medical Readiness and Deployment: Extracted From: 7/2024 - 04/2026

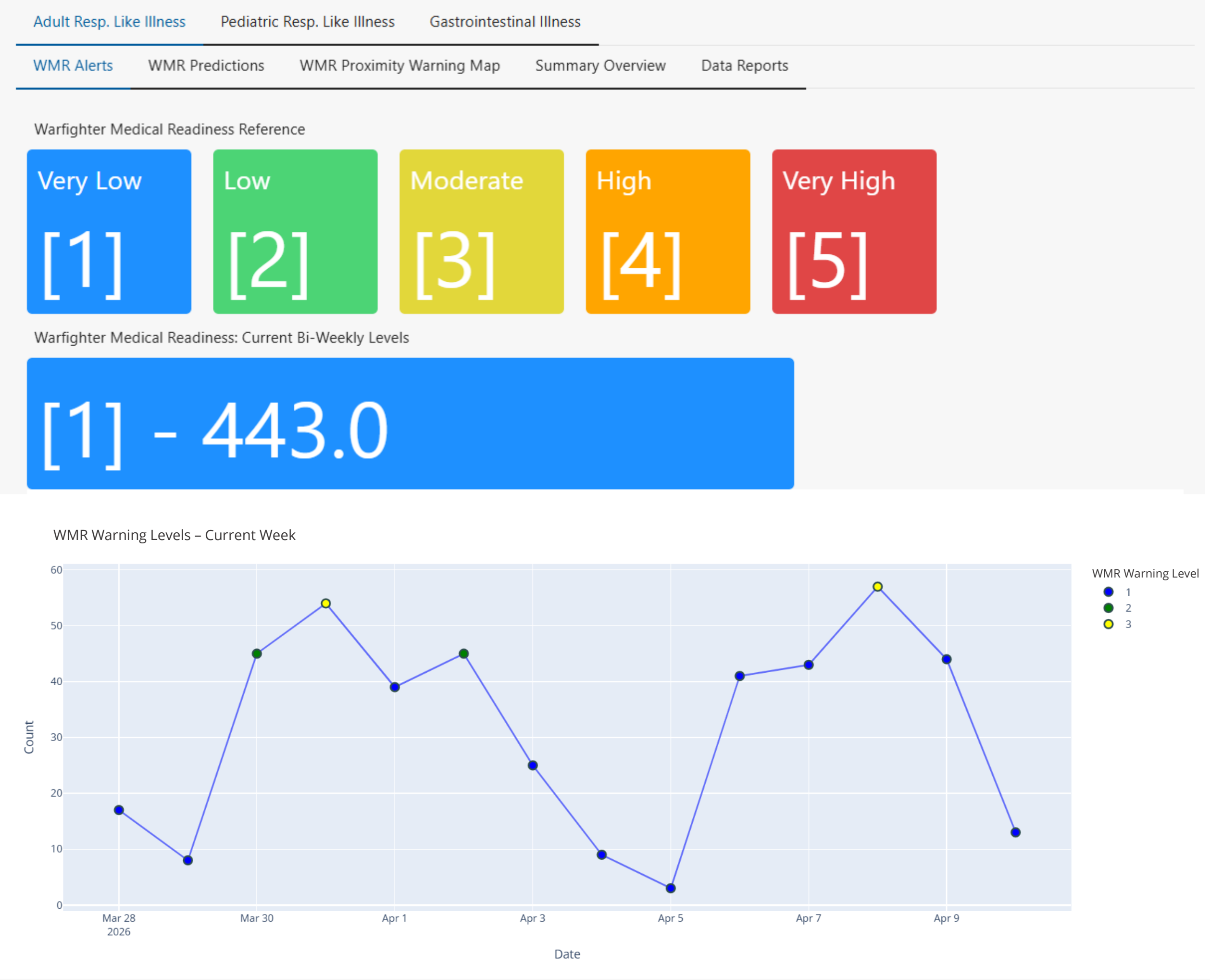
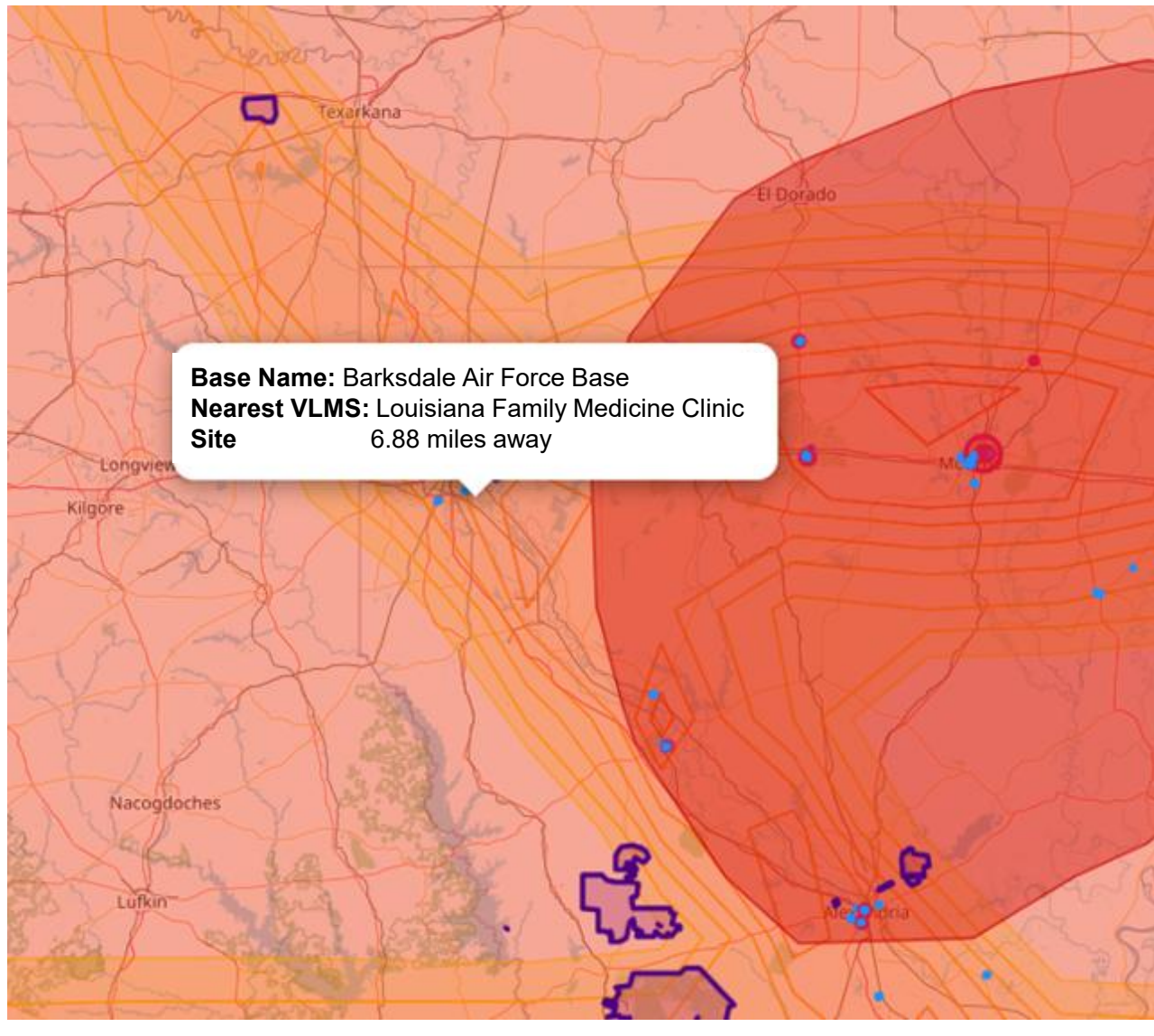
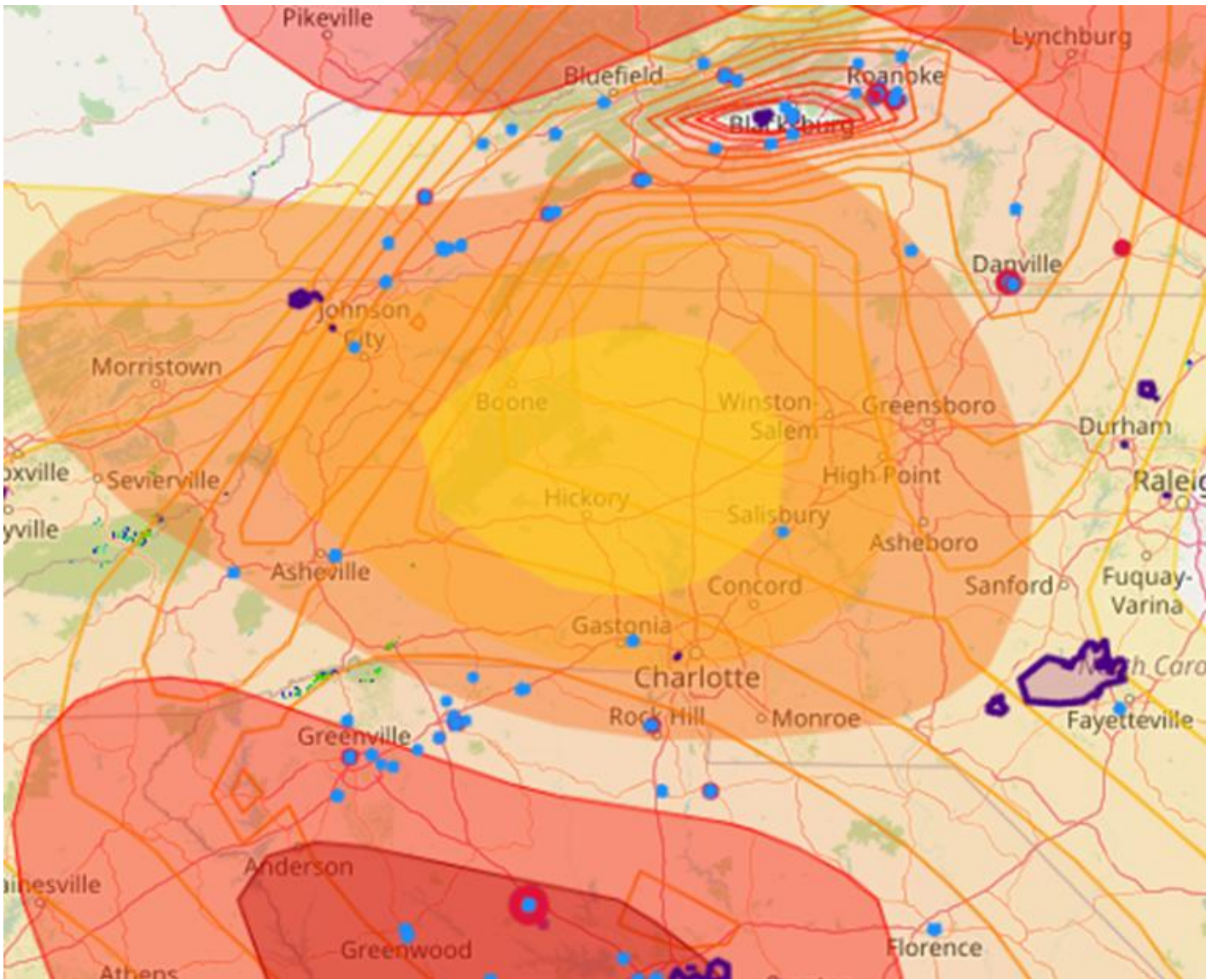
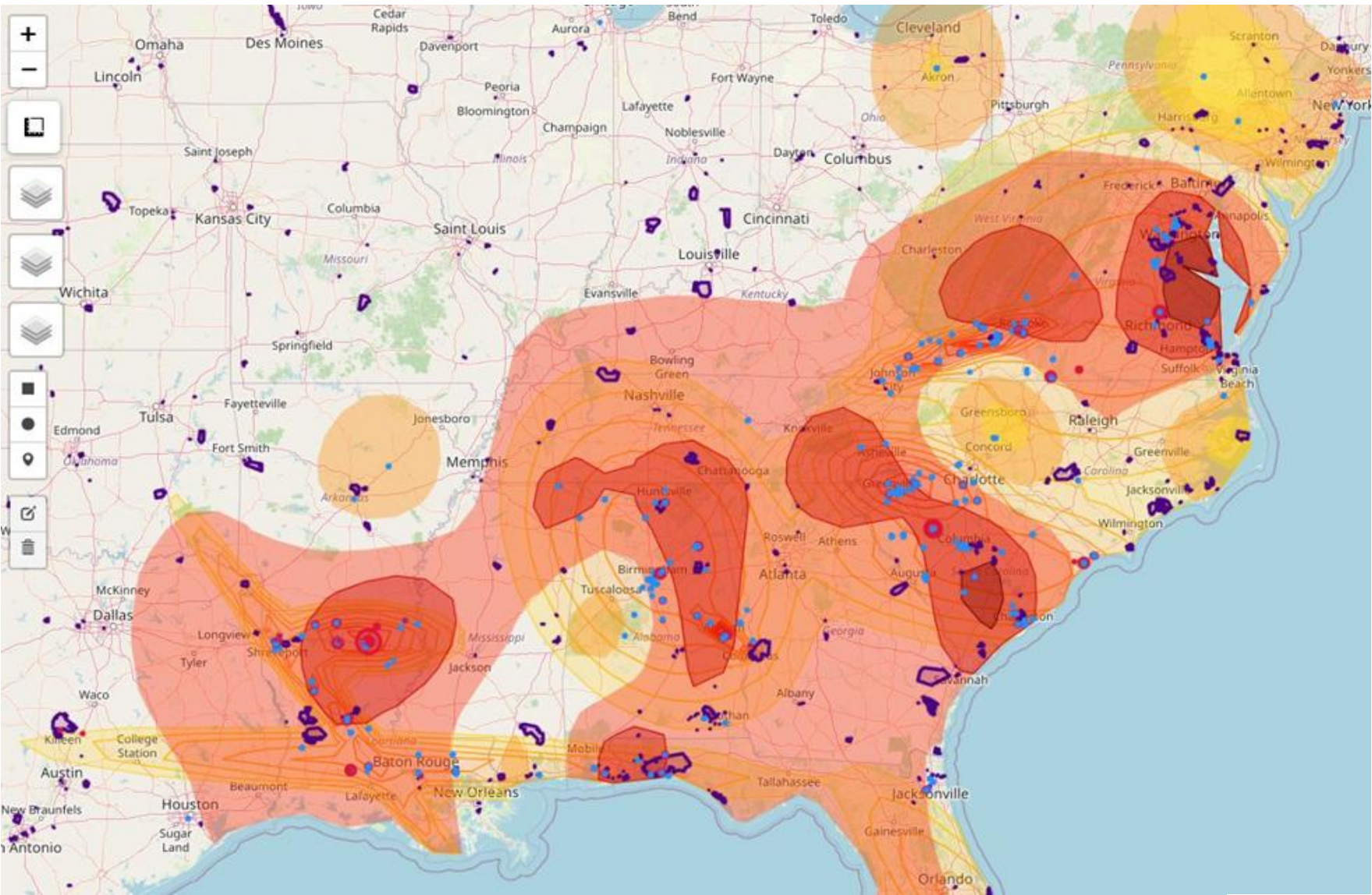


Figure 1: WMR Dashboard Surveillance Alert Tab

Visualizations for Actionable Intelligence



Warning Levels
Danger Severe Warning Caution

Figure 2-4: WMRD Proximity Warning Zone Map

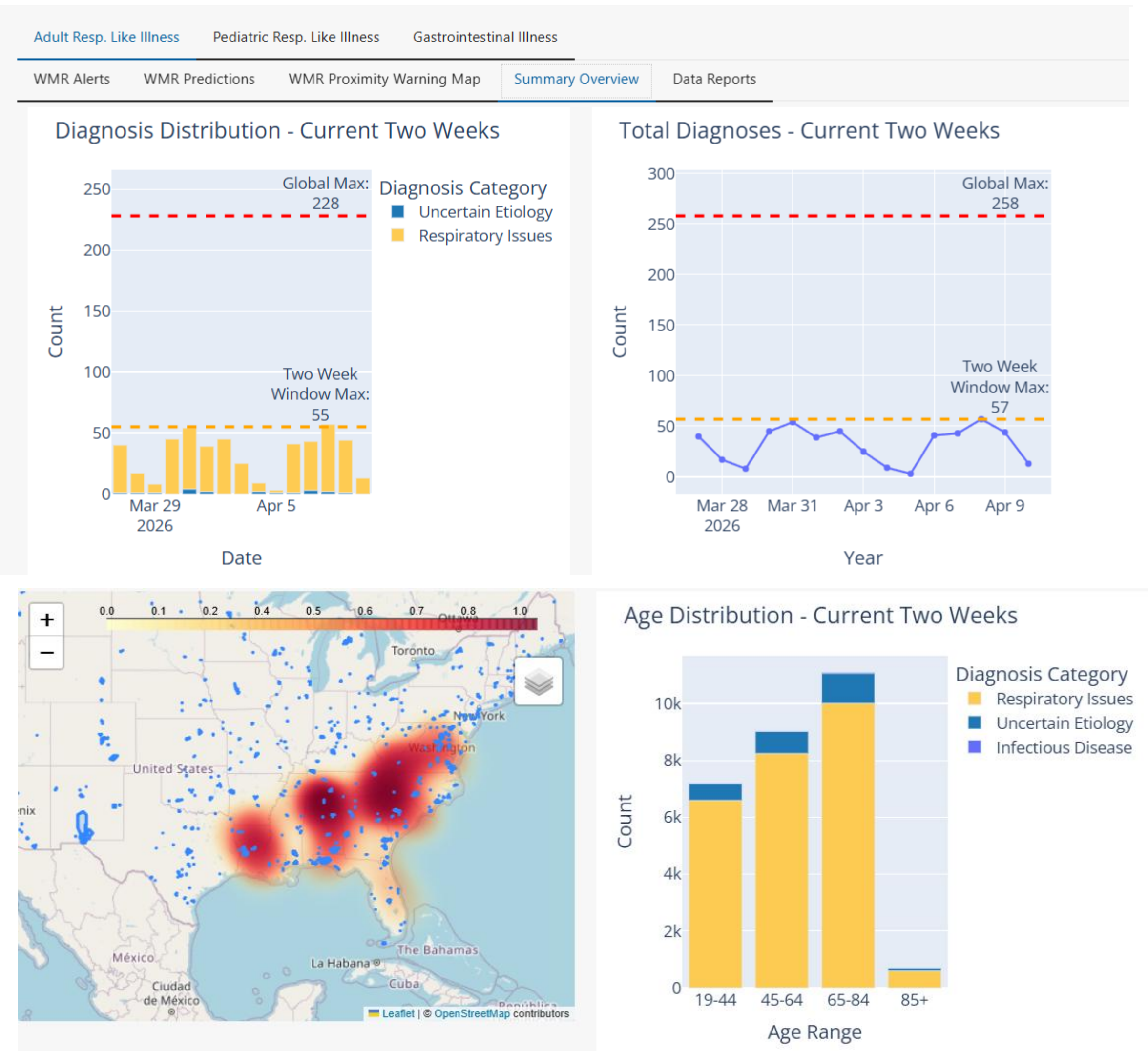


Figure 5-6: WMRD Additional Visualizations and Reports

Diagnosis Frequencies – ICD-10 Codes

ICD 10 Code	Diagnosis Category	Diagnosis	Occurrence: July 2024-Present	Occurrence: Current Two Weeks
J18.9	Respiratory Issues	Pneumonia, unspecified organism	5201	91
J06.9	Respiratory Issues	Acute upper respiratory infection, unspecified	3545	59
U07.1	Uncertain Etiology	COVID-19	2529	19
J18	Respiratory Issues	Pneumonia, unspecified organism	1685	54
J01	Respiratory Issues	Acute sinusitis	1542	14
J30.9	Respiratory Issues	Allergic rhinitis, unspecified	1063	60
J11.1	Respiratory Issues	Influenza due to unidentified influenza virus with other respiratory manifestations	807	4

Military Bases and Nearest Flagged VLMS Site

Base	Closest Site	Distance_miles
NG Hammond Airport	North Oaks Medical Center	4.8
Radford Army Ammunition Plant	Carillon Clinic Family Medicine	6.01
Redstone Arsenal	Rupen Joshi MD, LLC	6.44
NG Baton Rouge AFRC	Baton Rouge Clinic New Roads	6.91
NG Sandson AASF	(Location Not Listed)	6.93
Def Gen Supply Center	(Location Not Listed)	10.07

Results & Applicability

WMR currently surveils regions around active military bases across the Southeast and Delta Regions, continually monitoring real-time, de-identified 1,449,457 medical diagnostic records to identify concerning trends and determine which geographic areas and demographic subgroups are at risk for current and emerging diseases. Total influenza-like illness (ILI) daily ICD-10 counts that exceeded alert thresholds represented unusual levels of disease that occurred 11 times from November 20, 2020, through February 28, 2020. This analysis is consistent with the COVID-19 pandemic timeline. The first statistically significant increase in ILI occurred 9 days before the first laboratory-confirmed case in the country.

The WMR dashboard enables base medical command to access and interact with the data easily, understand the epidemiological situation, and make recommendations to leadership on resource management related to troop readiness and deployment.

Impact & Status

WMR with VLMS can capture real-time data on emerging infectious diseases and provide actionable intelligence to those who need it. The dashboard has been deployed and is continuously refined, integrating user feedback. User and technical guides have been developed for users.

For More Information

Contact: tdaniels@vcom.edu
WMR Dashboard: <https://dashboards.vlms.app/trdDashboard.html>



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