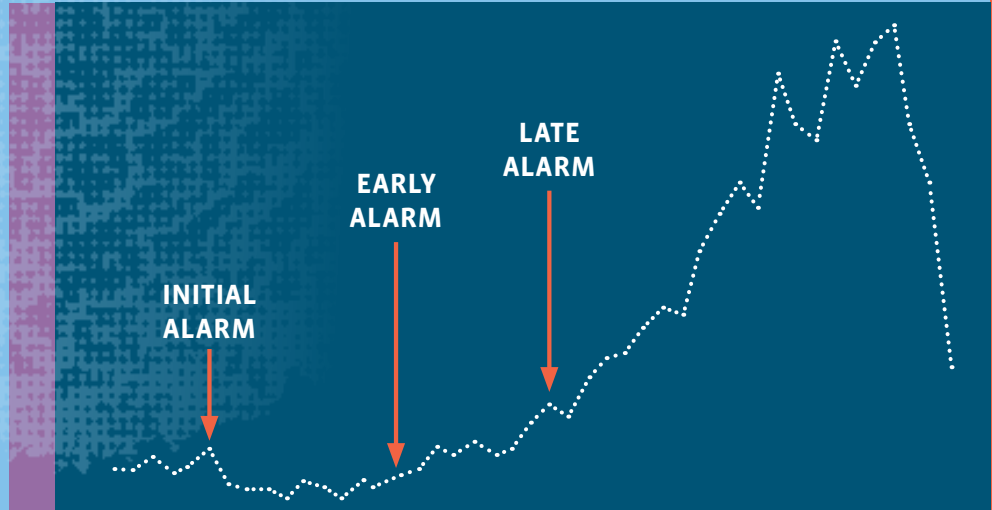


# OPERATIONAL GUIDE USING THE WEB-BASED DASHBOARD



The Early Warning and  
Response System (EWARS)  
for Dengue Outbreaks



World Health  
Organization



For research on  
diseases of poverty  
UNICEF • UNDP • World Bank • WHO

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## FOREWORD

Currently, dengue fever is the fastest-spreading mosquito-borne viral disease worldwide with epidemics overburdening stretched health systems and threatening the stability of societies. Although the transmission of dengue can be controlled with a combination of effective vector control interventions and an efficient vaccine, late detection and inadequate response mechanisms are compounding the effects of rapid transmission. Furthermore, despite the existence of outbreak alert indicators, the means of deploying them in early warning systems is often lacking.

With this in view, a programme led by TDR, the Special Programme for Research and Training in Tropical Diseases, conducted multi-country research into alarm signals for outbreaks and their use within early warning systems. In line with the prevailing literature,<sup>1,2,3</sup> alarm variables, such as hospitalized confirmed or probable dengue cases, as well as a set of epidemiological, entomological and environmental variables evidenced predictive abilities.<sup>4</sup> However, it was clear that countries are in need of a standardized and compatible approach to deploy these alarm signals in a predictive and operational way. It was on this basis that an accessible, adaptable and user-friendly early warning system was developed.<sup>5</sup>

This guide is an update to the previous version in 2017. This revised edition of *The Early Warning and Response System (EWARS) for Dengue Outbreaks: operational guide using the web-based dashboard* aims to provide programme managers with a user-friendly tool that can: (i) analyse and draw conclusions from historic dengue datasets; (ii) identify appropriate alarm indicators that can sensitively and specifically predict forthcoming outbreaks at smaller spatial scales; and (iii) use these results and analyses to build an early warning system to detect dengue outbreaks in real-time and respond accordingly. Together, these three components will build technical capacity and provide a standardized methodology for predicting dengue outbreaks in countries with great need. Furthermore, this web-based EWARS tool can ensure enhanced, fast and secured communication, between national and subnational levels, and standardized utilization of surveillance data.

This guide was produced by TDR together with WHO's Neglected Tropical Diseases (WHO/ NTD) and WHO regional offices in the context of a European Union-financed research programme, the International Research Consortium on Dengue Risk Assessment, Management and Surveillance (IDAMS), to

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