# Signs, Signals and Syndromes: Algorithmic Surveillance and Global Health Security in the 21st Century

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**Abstract :** This article offers a critical analysis of the rise of syndromic surveillance systems for the advanced detection of pandemic threats within contemporary global health security frameworks. The article traces the iterative evolution and ascendancy of three such novel syndromic surveillance systems for the strengthening of health security initiatives over the past two decades: 1) The Program for Monitoring Emerging Diseases (ProMED-mail); 2) The Global Public Health Intelligence Network (GPHIN); and 3) HealthMap. This article demonstrates how each newly introduced syndromic surveillance system has become increasingly oriented towards the integration of digital algorithms into core surveillance capacities to continually harness and forecast upon infinitely generating sets of digital, open-source data, potentially indicative of forthcoming pandemic threats. This article argues that the increased centrality of the algorithm within these next-generation syndromic surveillance systems produces a new and distinct form of infectious disease surveillance for the governing of emergent pathogenic contingencies. Conceptually, the article also shows how the rise of this algorithmic mode of infectious disease surveillance produces divergences in the governmental rationalities of global health security, leading to the rise of an algorithmic governmentality within contemporary contexts of Big Data and these surveillance systems. Empirically, this article demonstrates how this new form of algorithmic infectious disease surveillance has been rapidly integrated into diplomatic, legal, and political frameworks to strengthen the practice of global health security – producing subtle, yet distinct shifts in the outbreak notification and reporting transparency of states, increasingly scrutinized by the algorithmic gaze of syndromic surveillance.

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