

Dengue gives no warning. Cali does: data that arrives first

Smart anticipation against dengue

Funded by The Rockefeller Foundation, Cali tackles dengue with Dengue.IA: an inter-institutional project between Icesi University, the Public Health Secretariat of Cali, the Secretariat of Economic Development, the Administrative Department of Information and Communication Technologies (DATIC), Universidad del Valle, and the Administrative Department of Environmental Management (DAGMA).

How do we do it? With artificial intelligence models that cross-reference five data sources—climatic-meteorological, epidemiological, entomological, socio-demographic, and geographic—to anticipate dengue outbreaks with a 3-week lead time. This anticipation allows us to shift from reacting to preventing: taking action before cases rise.



What we are doing now

Prediction: Since August 1, 2025, the Public Health Secretariat of Cali has been testing a model that uses historical and environmental data to estimate dengue cases in Cali up to three weeks in advance, by neighborhood and commune.

Goal: Expand the prediction horizon to 4 weeks.

Prescription: Since December 9, 2025, the predictions have fed the development of a system that recommends specific preventive actions. Based on risk alerts by neighborhood and commune, the model identifies what actions to take—fumigation, breeding site cleanup, dispatching crews, logistical guidelines—to reduce transmission and prevent severe outbreaks.

The Innovation

- 1 km² granularity to make precise predictions at the neighborhood and commune level in the local context.
- Temporal anticipation that transforms planning into preventive action with weeks of advantage.
- Integration of the prediction with specific actions through the SIVIGILA portal of the National Institute of Health (INS) to strengthen evidence-based public policies regarding dengue.
- Direct integration with the Cali Health Secretariat through the Health Observatory on a platform where anyone can access and explore data in real time.

“With this strategy, we are transforming public health risk management through models that analyze real-time data to anticipate outbreaks with an early detection margin of 3 to 4 weeks and respond with agility.”

— Carlos Eduardo Pinzón Flórez, Undersecretary of Health Promotion, Prevention, and Social Production.

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Infographic: [How Dengue.IA works?](#)

More project updates: <https://www.icesi.edu.co/citradi/dengue-cali/>

Dengue.IA Website: <https://www.icesi.edu.co/citradi/dengue-cali/>

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