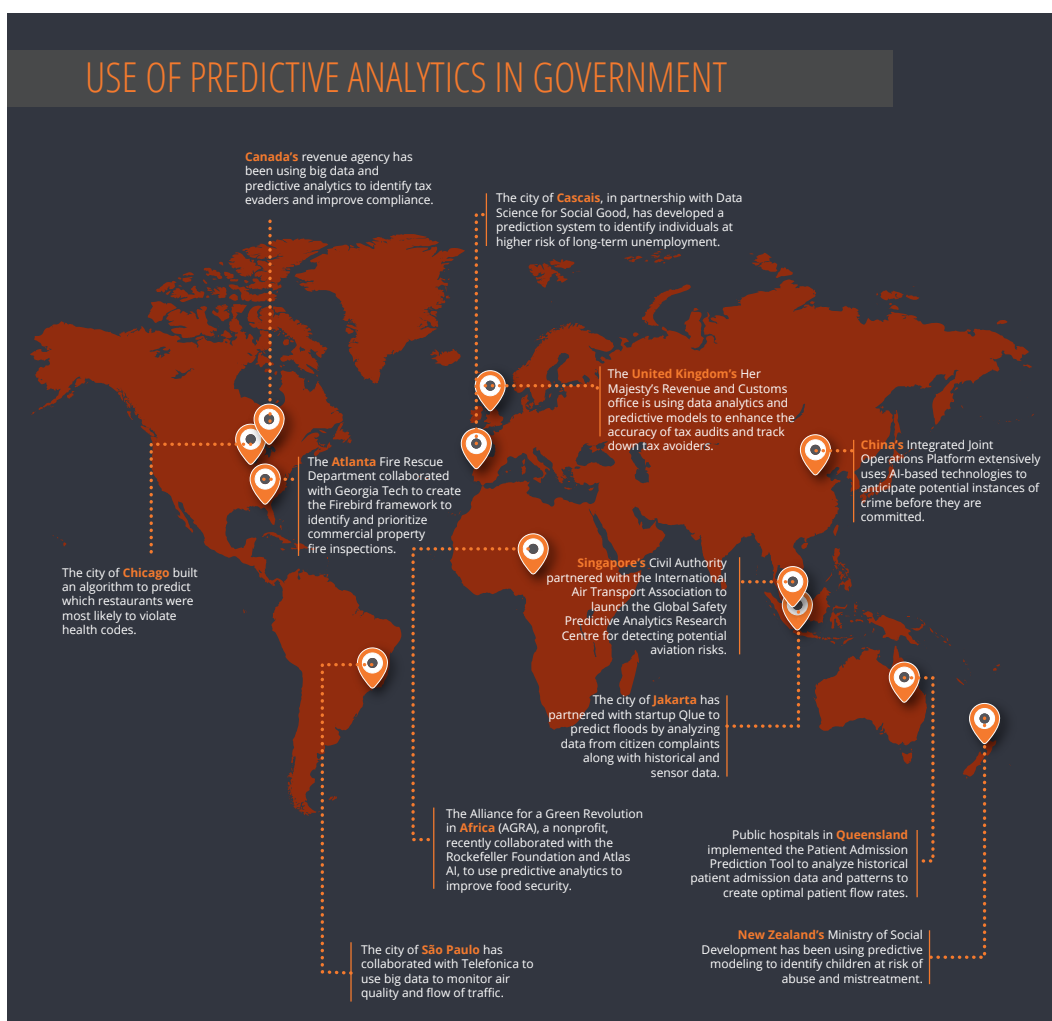# Preempting problems with anticipatory government

AN OUNCE OF prevention really is worth a pound of cure—especially in the public sector. Recent advances in predictive analytics and artificial intelligence (AI) can now help governments address problems such as fraud and opioid abuse before they become full-blown crises.

The idea that government should try to prevent problems instead of just reacting to them is not new, of course.[1] But today, an exponentially greater ability to analyze massive data sets has made such efforts more successful. In fact, the Ash Center at Harvard University has identified more than 200 success stories related to the use of data and analytics across the city, county, state, and federal levels in the United States.[2] And it's not just American citizens who are benefiting. Government agencies around the world are putting predictive analytics to good use as well (see figure).

What can predictive analytics help public servants achieve? Here are a few examples:

Reducing crime. The police department of Durham, North Carolina, uses AI to observe

USE OF PREDICTIVE ANALYTICS IN GOVERNMENT

Canada's revenue agency has been using big data and predictive analytics to identify tax evaders and improve compliance.

The city of **Cascais**, in partnership with Data Science for Social Good, has developed a prediction system to identify individuals at higher risk of long-term unemployment.

The **United Kingdom's** Her Majesty's Revenue and Customs office is using data analytics and predictive models to enhance the accuracy of tax audits and track down tax avoiders.

China's Integrated Joint Operations Platform extensively uses AI-based technologies to anticipate potential instances of crime before they are committed.

The **Atlanta** Fire Rescue Department collaborated with Georgia Tech to create the Firebird framework to identify and prioritize commercial property fire inspections.

The city of **Chicago** built an algorithm to predict which restaurants were most likely to violate health codes.

Singapore's Civil Authority partnered with the International Air Transport Association to launch the Global Safety Predictive Analytics Research Centre for detecting potential aviation risks.

The city of **Jakarta** has partnered with startup Qlue to predict floods by analyzing data from citizen complaints along with historical and sensor data.

The Alliance for a Green Revolution in **Africa** (AGRA), a nonprofit, recently collaborated with the Rockefeller Foundation and Atlas AI, to use predictive analytics to improve food security.

Public hospitals in **Queensland** implemented the Patient Admission Prediction Tool to analyze historical patient admission data and patterns to create optimal patient flow rates.

New Zealand's Ministry of Social Development has been using predictive modeling to identify children at risk of abuse and mistreatment.

The city of **São Paulo** has collaborated with Telefonica to use big data to monitor air quality and flow of traffic.

patterns in criminal activity and identify hotspots with a high incidence of crime, thus allowing for quicker intervention. This contributed to a 39 percent drop in violent crime in Durham from 2007 to 2014.[3]

Improving food inspections. The city of Las Vegas's health department used advanced AI technologies to analyze more than 16,000 tweets daily for food-poisoning-related clues (for phrases such as "I feel nauseous," for example) to help detect venues likely to pose public health hazards.[4]

Countering terrorism. An EU initiative called RED (Real-time Early Detection) Alert aims to provide early alerts of potential propaganda and signs of warfare by using natural language processing to monitor and analyze social media conversations.[5] ●

To learn more about how public sector organizations can use emerging technologies to preempt issues, read Anticipatory government: Preempting problems through predictive analytics on www.deloitte.com/insights.

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2. Ash Center for Democratic Governance and Innovation, "Data-smart city solutions," accessed May 7, 2019.

3. Kevin Ebi, "How Durham, N.C. fights crime with data—and wins," Smart Cities Council, September 17, 2014.

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