

MAKING PUBLIC HEALTH INFORMATION MORE ACCESSIBLE WITH AI

An AI-Powered Platform for Exploring Disease Outbreaks and Public Health Information

1. BACKGROUND

Public health information is widely available but is often dispersed across multiple sources and presented using medical terminology that may be difficult for the general public to understand. As a result, users must navigate multiple websites to explore outbreaks, interpret health information, and locate reliable guidance from official public health organizations.

2. RESEARCH OBJECTIVE

Explore how artificial intelligence and interactive visualization can improve the accessibility and usability of public health information.



Haili-Marie Cox

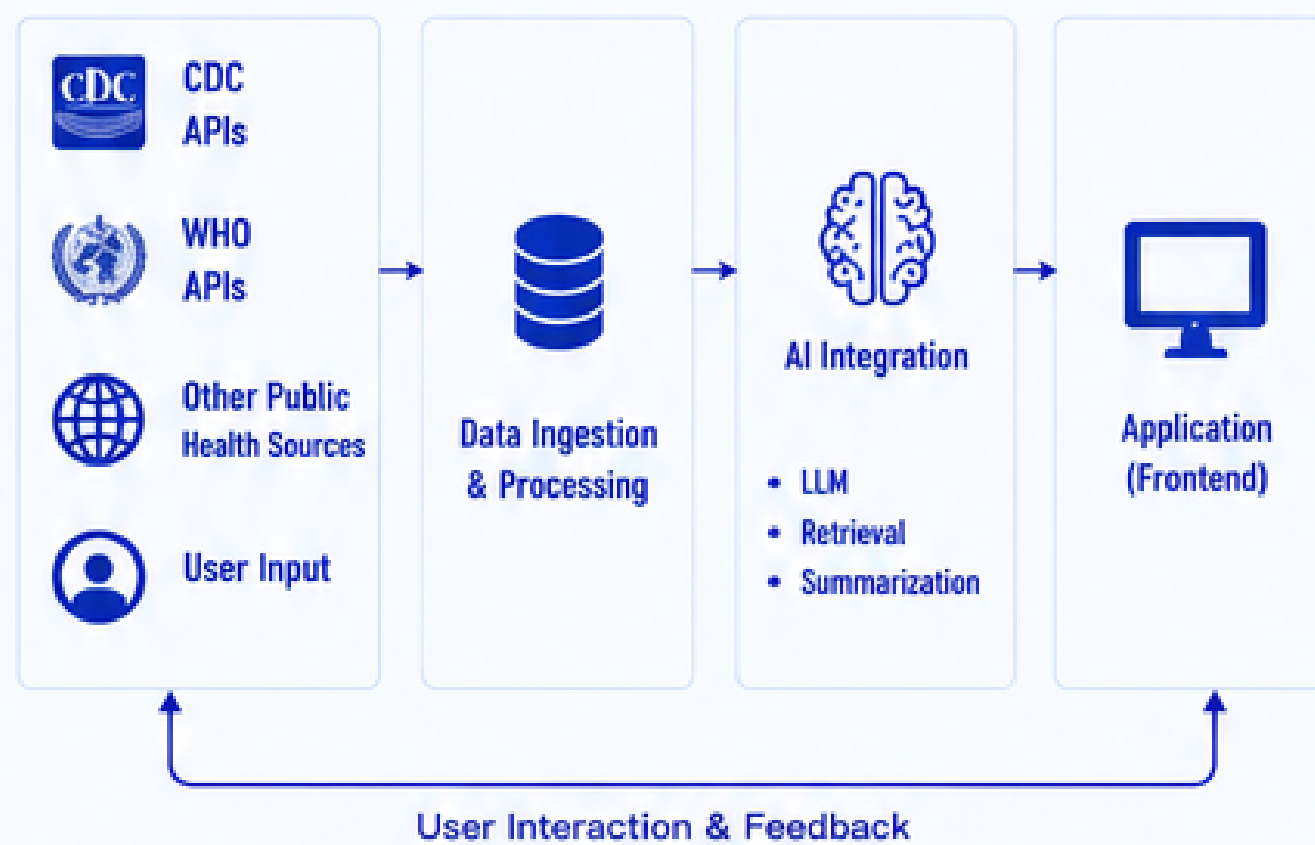
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3. SYSTEM DESIGN & METHODS

SYSTEM ARCHITECTURE



DATA SOURCES

- **Official Public Health Organizations**
Centers for Disease Control and Prevention (CDC)
World Health Organization (WHO)
- **Public Health Data**
Disease surveillance datasets, outbreak reports, Epidemiological records
- **Official Health Resources**
Public health guidelines, disease fact sheets, prevention and treatment recommendations

AI INTEGRATION

- Generates plain-language explanations of public health information
- Answers user questions using natural language
- Summarizes disease and outbreak information
- Provides responses supported by official public health sources

DESIGN PRINCIPLES

- **Accessibility** – Present complex health information in an understandable way.
- **Reliability** – Prioritize trusted public health organizations as data sources.
- **Usability** – Design an intuitive interface that supports efficient navigation.
- **Transparency** – Provide citations and links to official resources.
- **Interactivity** – Encourage exploration through maps, filters, and AI assistance.

4. PROTOTYPE EVALUATION

A. EVALUATION PROCESS



B. USER BEHAVIOR

Typical Navigation Path

Symptom Explorer → AI Assistant was the most common navigation sequence observed.

Most Frequently Used Tools

The Dashboard served as the primary entry point, while the AI Assistant and Symptom Explorer were the most frequently revisited tools.

Common Searches

Hantavirus was the most viewed disease, while fever was the most frequently selected symptom.

Feature Interactions

Users commonly explored disease information before asking follow-up questions through the AI Assistant.

C. DESIGN REFINEMENTS

- **Source Transparency**
Added citations and official resource links throughout the platform.
- **Navigation**
Improved transitions between the Dashboard, Symptom Explorer, and AI Assistant.
- **Accessibility**
Refined AI responses to provide clearer, plain-language explanations.
- **User Experience**
Simplified the interface to improve usability and reduce visual clutter.

5. IMPACT

- Brought public health information into one place.
- Made outbreak information easier to explore and understand.
- Combined AI with official public health resources.
- Showed how AI can improve access to reliable health information.

6. FUTURE WORK

- Add more public health data sources.
- Expand symptom and disease coverage.
- Improve AI responses and recommendations.
- Continue refining the platform through user feedback.

7. PLATFORM OVERVIEW

Sentinel

PUBLIC HEALTH WATCH

DashboardGlobal MapSymptom ExplorerOutbreak AssistantReport Simplifier

Public health, at a glance.

Sentinel tracks disease outbreaks that health agencies like the CDC and WHO are currently reporting. Everything you see comes straight from those reports — nothing is invented, and details the agencies haven't shared are simply left out.

CURRENTLY REPORTED OUTBREAKS

31

Total number of active outbreak reports Sentinel is currently tracking across all monitored public-health sources.

Ask about current outbreaks — e.g. "Where is measles spreading?"

Ask

Featured currently-reported outbreaks

Top 10 of 31 currently-reported records

View previous reports (108)

Salmonella

United States

2024-07-10

2024-08-05

Salmonella Outbreak Linked to Jalisco

Ebola

Democratic Republic of the Congo

2024-08-03

2025-03-01

Ebola disease caused by the Bundibugyo virus

Sentinel

PUBLIC HEALTH WATCH

DashboardGlobal MapSymptom ExplorerOutbreak AssistantReport Simplifier

Explore where diseases are being reported around the world

25 mappable verified records • Last reported: Aug 5, 2025

Search a disease, city, state, or country — e.g. measles, Atlanta, Lagos

HOW TO READ THIS MAP

Color identifies the disease. Intensity reflects the amount of verified reported activity — only when comparable numeric data is available.

Reported outbreaks — comparable activity data

Click a country for details.

Sentinel

PUBLIC HEALTH WATCH

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Symptom Explorer

Explore diseases commonly associated with a set of symptoms. Sentinel matches by overlap with published clinical descriptions from CDC and WHO — it does not diagnose, rank probability, or replace a clinician.

Common Symptoms

FeverCoughHeadacheSore throatFatigue

Muscle achesChillsRunny or stuffy nose

NauseaDiarrheaRash

Shortness of breath

Selected Symptoms

No symptoms selected yet.

Search any symptom — try "photophobia", "bullseye rash", "jaundice"...

Sentinel

PUBLIC HEALTH WATCH

DashboardGlobal MapSymptom ExplorerOutbreak AssistantReport Simplifier

Ask the Outbreak Assistant

Answers use Sentinel's public-health sources when the question is about current outbreaks. For information only — not a substitute for a clinician.

TRY A QUESTION

What are the symptoms of measles?

How is bird flu transmitted?

What's currently being reported about Ebola?

What's currently being reported about Measles?

What's currently being reported about Legionnaires' Disease?

Ask about outbreaks, diseases, or travel...Ask

Sentinel

PUBLIC HEALTH WATCH

DashboardGlobal MapSymptom ExplorerOutbreak AssistantReport Simplifier

Report Simplifier

Upload a public-health or medical report (PDF, DOCX, TXT, JPG, or PNG). Sentinel reads the text, identifies key facts, and rewrites it at your chosen reading level — grounded strictly in the document you uploaded.

Upload a report

Drag and drop a file here, or click below.

Supported formats: PDF, DOCX, TXT, JPG, and PNG. Photos and scans are transcribed first, then analyzed like any other report.

Choose file

Max 20 MB per file. You can select several images to cover a multi-page report.