From Artificial Intelligence Ready to Artificial Intelligence Accessible: Public Health Agencies Need Model Context Protocols

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See also AI in Public Health, p. 1484–1585.

The public health field does not need to chase every artificial intelligence (AI) model. It needs to make authoritative public health knowledge reachable by the AI systems people use. Having served as the Centers for Disease Control and Prevention (CDC) chief AI officer and the assistant director for AI research and development at the White House Office of Science and Technology Policy, I see the next phase of modernization as less about model novelty than institutional plumbing. Public health agencies should treat AI-accessible infrastructure as part of their communications and data strategy, ensuring that official sources are designed for AI systems to retrieve, contextualize, and cite authoritative information. Without it, AI systems will answer public health questions, but they may rely on unofficial, outdated, or decontextualized sources. This creates an implementation gap: AI may become increasingly capable, but public health benefit will depend on whether authoritative knowledge is available in forms AI can reliably use. Public health agencies must build the official infrastructure that lets AI systems retrieve, contextualize, and cite trusted sources.

Public health agencies have spent the past decade modernizing data systems for faster exchange, interoperability, and action. This has meant closing data gaps and providing timely information for decision-making and response. CDC's AI vision builds on this, framing AI as a tool for accelerating detection and response, reducing administrative burden, and strengthening operations.[1,2] These efforts have made public health data more available. But as AI becomes a new interface for finding and using information, AI readiness is no longer enough. The next bottleneck will be whether trusted public health information can be discovered, retrieved with context, interpreted accurately, and cited by the AI systems that people increasingly use to ask clinical, community, policy, and research questions.

BEYOND STRUCTURED DATA

The distinction matters. To be AI ready means data are structured, documented, timely, and of known quality.[3] AI-accessible data means more: AI tools need an interface to discover data sets, retrieve the right slice, preserve provenance or source history, and receive the limitations and assumptions needed to interpret the response to a contextual query. A static webpage or structured application programming interface (API) may not give an AI assistant enough context for nuanced questions.

The Model Context Protocol (MCP) is one answer to this problem. An MCP is an open standard for connecting AI applications to external systems, including data sources, tools, files, workflows, and prompts.[4] In practice, an MCP server lets an AI assistant query an official source in a controlled and standardized way. It can expose a surveillance end point, data dictionary, guideline library, or local resource. Although the protocol does not solve governance, quality, or interpretation by itself, it creates a standard place to encode those requirements. Traditional APIs make data available to software. MCP servers can make both data and context available to AI systems. The next evolution in the public health data infrastructure layer should include MCP-style interfaces, not only traditional APIs.

The federal statistical community has already noted this gap. The Federal Committee on Statistical Methodology argues that AI is changing how public information is consumed and that official statistics must be central to AI-driven experiences.[5] It calls for

metadata-enriched APIs and machine-understandable data, not just machine-readable formats. It also recommends experimenting with MCPs, including wrapping existing APIs or creating gateways so AI assistants can retrieve data in a controlled, standardized way and agencies can measure accuracy, relevance, and developer time. Public health agencies should apply that recommendation to surveillance, chronic disease, environmental health, emergency response, and community health assessment.

It is worth distinguishing generative AI from agentic AI. CDC's AI use case inventory identifies generative AI uses such as drafting, synthesis, coding, communications, meeting summaries, chatbots, and early research support.[6] In contrast, CDC defines agentic tools as systems that can autonomously plan and execute multistep research tasks, such as deep research, and identifies uses including literature synthesis, policy scans, strategic planning, and communication development across multiple sources.[7] Both depend on retrievable, authoritative context. Agentic systems make authoritative retrieval interfaces even more important because they may combine information across sources and steps.

In either case, programmatic adoption is slow; a 2025 report from the Association of State and Territorial Health Officials suggests that AI adoption in state and territorial health agencies remains concentrated in administrative use cases, with only 14% reporting that they use AI for anomaly detection, disease surveillance, or predictive modeling.[8] Clinical and consumer adoption is moving faster than the development of public infrastructure; AI has already become part of the informal health system. A 2025 *JAMA Network Open* study found that 13.1% of US adolescents and young adults (aged 12–21 years), about 5.4 million people, had used generative AI for mental health advice.[9] A recent survey found that 72% of adolescents had used AI companions, with one third using them for social interaction and relationships, including emotional support and friendship.[10]

If official information is not AI accessible, people will still receive AI-mediated answers, but those answers will come from whatever the model can find. A parent's search for information about measles exposure, a resident's inquiry about wildfire smoke, or a caregiver's search for local cooling center guidance may start and end inside a chatbot. Without AI-accessible sources, these responses may lack public health or clinical grounding.

This is also a data equity issue. Federal efforts to improve data equity have emphasized the importance of data quality, availability, timeliness, and infrastructure.[11] AI systems will privilege what they can access. If authoritative public health data remain locked in PDFs, brittle dashboards, inconsistent portals, or undocumented APIs, AI-mediated answers will overrepresent better-indexed sources and better-resourced jurisdictions. In clinical medicine, tools such as OpenEvidence suggest a curated and monitored model for AI-supported evidence access. The public health field needs an analogous, trusted evidence layer.

As a concrete example, consider public meetings as a data source. Local boards of health, city councils, school boards, transportation authorities, and planning commissions discuss housing, cooling centers, overdose response, food access, exposures, and transportation barriers. Those records are public but rarely usable for large-scale analysis. An AI-accessible public health system could answer questions such as, "Which counties discussed heat illness in the past three months?" or "How are state-imposed mask mandates being discussed in local school boards?" In public health contexts, real-time answers to questions like these could be transformative. A well-designed MCP server could retrieve agendas, transcripts, and linked materials, with dates, jurisdictions, speakers, and citations for policy development. This is an active area for applied AI research.

BUILDING THE TRUSTED EVIDENCE LAYER

The public health community should do five things now. First, publish official MCP servers for high-value public data sets and knowledge resources: surveillance summaries, dashboards, guidance, program inventories, data dictionaries, frequently asked questions, and community resources. The work of the US Digital Corps on MCP retrieval for federal data is a good start.[12] Second, expose metadata to AI, including source, update cadence, geography, denominator, variable definitions, suppression rules, limitations, recommended citations, and contact information. Third, build governance into these services by assigning responsibility for updates, establishing deprecation practices and access controls where needed, maintaining audit logs, and monitoring for misuse. Fourth, benchmark AI answers before and after MCP implementation, including edge cases that require multiple reasoning steps. Finally, encourage AI and MCP readiness in procurement and grants, and fund staff to maintain these services as products, not pilots. Implementation

will require investment, workforce capacity, technical expertise, and supportive policy, which may be challenging in resource-constrained public health settings.

The call to action is straightforward: make the official source the easiest source for AI systems to find, use, contextualize, and cite. AJPH

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CONFLICTS OF INTEREST

T. Hoppe is a cofounder and the chief AI officer of GroundVue, a public benefit corporation developing AI-enabled public policy information infrastructure.

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