BUILDING CAPACITY



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Building Capacity With the Pragmatic Adoption of Artificial Intelligence

Editor's Note: A need exists within environmental health agencies to increase their capacity to perform in an environment of diminishing resources. With limited resources and increasing demands, we need to seek new approaches to the practice of environmental health. Acutely aware of these challenges, the *Journal* publishes the Building Capacity column to educate, reinforce, and build on successes within the profession using technology to improve efficiency and extend the impact of environmental health agencies.

This column is authored by technical advisors of the National Environmental Health Association (NEHA) Data and Technology Section, as well as guest authors. The conclusions of this column are those of the author(s) and do not necessarily represent the views of NEHA.

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S ome argue that generative artificial intelligence (AI), the technology behind popular tools like ChatGPT, is not ready for prime time. They point to rapidly emerging standards and capabilities. They point to behaviors like hallucinations and jailbreaking. Hallucinations refer to patently incorrect responses (i.e., fibbing) in ways that appear otherwise completely legitimate. Jailbreaking refers to the practice of tricking AI into responding in ways contrary to its training.

Others would point out that the government is not expected to chase down emerging technologies. Consistent and predictable are watchwords for most regulators, as well as attributes appreciated by their customers. The Prompt Index, an AI newsletter, released a simple decision chart to determine if it is safe to use ChatGPT (Figure 1). In seven simple workflow shapes, the diagram shows what few people want to hear—Just cool your jets for a few minutes.

Turning the Corner

It was tremendously difficult for me to write the preceding paragraphs. With new technology, I am not a "cool your jets" kind of person. So, I keep probing, pushing, and asking leaders to not bury their heads in the sand. I urge them to be in tune and capture opportunity as it presents itself. Some opportunity exists now. Even more opportunities will come along soon enough.

What Is Exciting Now?

We have the opportunity now to be learners—to explore and build up personal and professional experiences. We have the opportunity today to guide and counsel those people who would integrate the technologies.

These opportunities can play out by encouraging an IT or departmental policy that welcomes exploration within guidelines intended to protect organizational standards such as respecting privacy, promoting equity, and supporting colleagues. Check out the Building Capacity column in the September 2023 Journal of Environmental Health (www.neha.org/Images/resources/JEH9.23-Column-Building-Capacity.pdf) for a sample policy for environmental health departments on the use of generative AI.

Many organizations are also forming AI adoption committees that are charged with allocating modest budgets, arranging training, and celebrating small wins. These committees can further signal to vendors what is expected in future software versions.

This degree of opportunity can be incrementally advanced through thoughtful and responsible training and exploration.

What Will Soon Be Exciting?

Most health departments are looking to their existing software vendors to integrate AI into the existing software. Expect Microsoft 365 Copilot soon, which will integrate generative AI into Word, Excel, Outlook, PowerPoint, and other Microsoft apps. Based on early access, we anticipate new capabilities that are expected to be offered as a fee-based add-on. For many health departments, this software tool (or its equivalent) will raise



Adapted from The Prompt Index (https://www.reddit.com/r/ChatGPT/comments/16ailop/is_it_safe_to_use_chatgpt/ ?rdt=34544).

TABLE 1

Sample Feasibility Matrix

	Mission Alignment	Increased Efficiency	Nonfinancial Benefits	Technical Feasibility	Internal Readiness	External Readiness
Draft inspection reports	2	2	1	1	1	1
Respond to public inquiries	2	2	2	2	2	2
Education and training	3	2	2	2	2	2
Natural language dashboards	2	2	1	1	1	1
Regulatory assistant	1	2	1	1	1	1
Meeting deliverable summaries	2	3	1	3	2	3
Note Batings are based on a 5-point Likert scale ($\Omega = \text{not feasible and } 5 = \text{highly feasible}$)						

expectations. After all, if Word will help me write a determination letter, why wouldn't my inspection software do the same?

Furthermore, your inspection and permit tracking software will be able to do so much more, from helping with inspection comments to creating dashboards using plain language. For example, "Which five inspectors cited handwashing violations in routine inspection of retail food establishments in the past year," is a request that can now be met in some systems. It is just going to get better and better.

When it comes to great ideas about AI, let me introduce a decision-making model known as a feasibility matrix (Table 1). In this model, your AI adoption committee agrees on a rubric and assigns scores to those measures. Common measures might be mission alignment (e.g., does the initiative impact public health), increased efficiency, and nonfinancial benefits (e.g., customer satisfaction), followed by potential headwinds such as technical feasibility, internal readiness, and external readiness. Internal and external readiness might, for example, consider compatibility with your AI policy.

Each score need not be completely scientific and will change over time. Readiness and technical feasibility can change every day. Reviewing and updating your feasibility matrix should be a quarterly exercise or part of your strategic planning. Chat-GPT4 is advertised to be much better than ChatGPT3. Also, many organizations are regularly releasing their versions, such as LLAMA2 from Meta, Bard from Google, and Claude from Anthropic.

In Table 1, one might agree that "meeting deliverable summaries" and "education and training" are viable projects right now.

What Is on the Horizon?

It is no longer controversial to suggest that we will have personal AI assistants, automated responses to external queries, and software systems that talk to each other using just natural language. If you are in the workforce 10 years from now, you will be among the leaders who frame and usher in many of these changes.

For environmental health professionals, there will be massive changes not only in regulator offices but also in the kitchens and offices of the establishments you regulate. X

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