

“Mind-Maps” for a Public Health Laboratory

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Introduction

Organizational mapping is a well-established concept for visualizing processes, roles and relationships in a system. It’s a way of visualizing information about how the parts of an organization relate to each other.

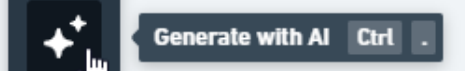
We have proposed an information model for the Public Health Laboratory System as a Distributed Public Health Laboratory Infrastructure (DPHLI). In other words, we want can represent the Public Health Laboratory as a flow of information. This is intended to provide a broad range of participants with a common means to understand and demonstrate the essential relationships between: 1) regulatory oversight, 2) testing equipment, 3) tests, 4) Information flow and 5) test methodology.

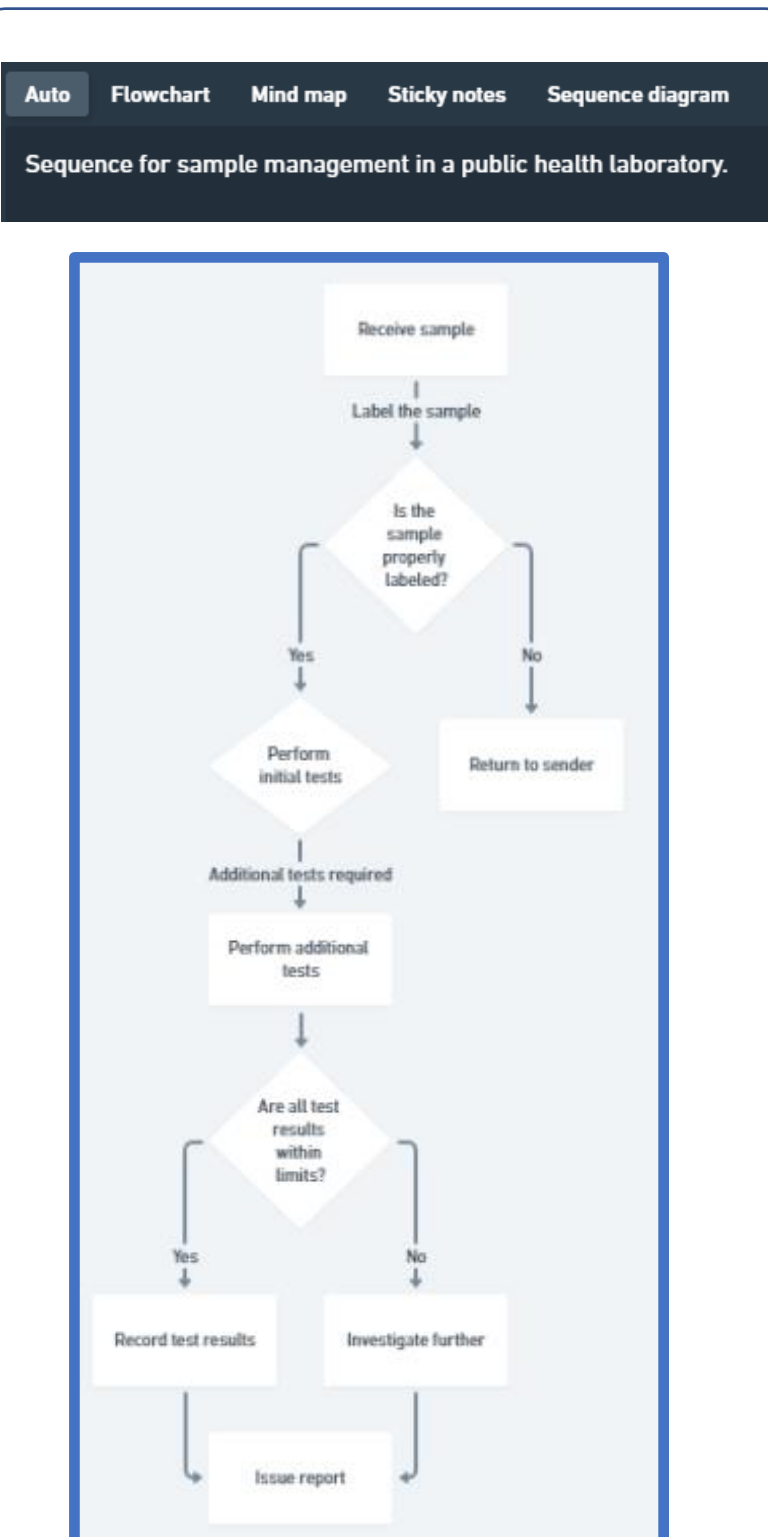
We choose an information tool called a Mind-map. Mind-Maps are interactive visual diagrams that represents ideas, concepts, or tasks centered around a main theme or topic. They are structured hierarchically, using branches radiating from the center to depict connected subtopics or related information. They can represent a complex organization structure, in an understandable way. The Mind-Map platform that we choose is inexpensive, cloud based, supports concurrent editing, presentation, guest and Link modes, with an embedded Large Language Model (LLM) to quickly generate descriptive content. Several Mind-Maps can be connected to render information for larger systems (PHLS, DEP, Plant and Animal Science...)

Specific scenarios for how this can be used include:

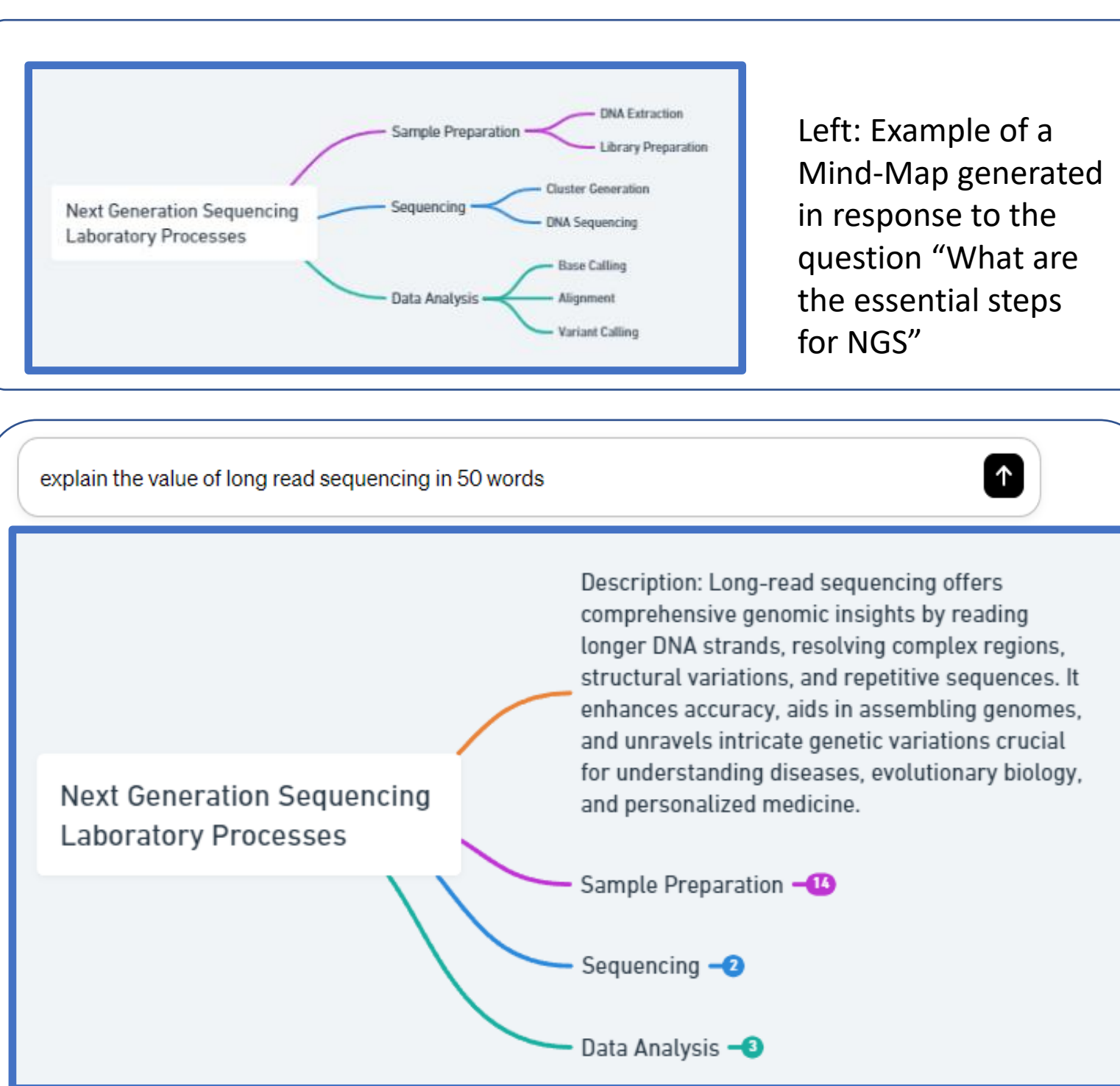
- Interactively Navigate an entire organization, in one interface
- Branch to other Mind-Maps to explore System level relationships
- Show relationships between organizational units and services, as a flow of information
- Explain the Public Health Laboratory System to Non-laboratorians**
- Represent the Laboratory and its various roles, to the public
- Inform Laboratory Educational programs about training to PHL testing and methods
- Provide Links to vetted demonstrations of test methodologies
- Embed “Pre-Defined” PubMed searches, and legislative databases

Methodology

- Open the Mind-Map platform in a standard browser window
- Select a Template or Theme for a “Board”
- Place your cursor on the Board and select  **Generate with AI** 
- This opens a window to type in a question: Example: Show a process...
- Choose the format: Flowchart, Mind-Map, Sequence Diagram.
- Add, Revise or delete any content on any tab.
- Work collaboratively with others or send a View only link via email
- Expand on any tab with “Generate Ideas” or with your preferred LLM:



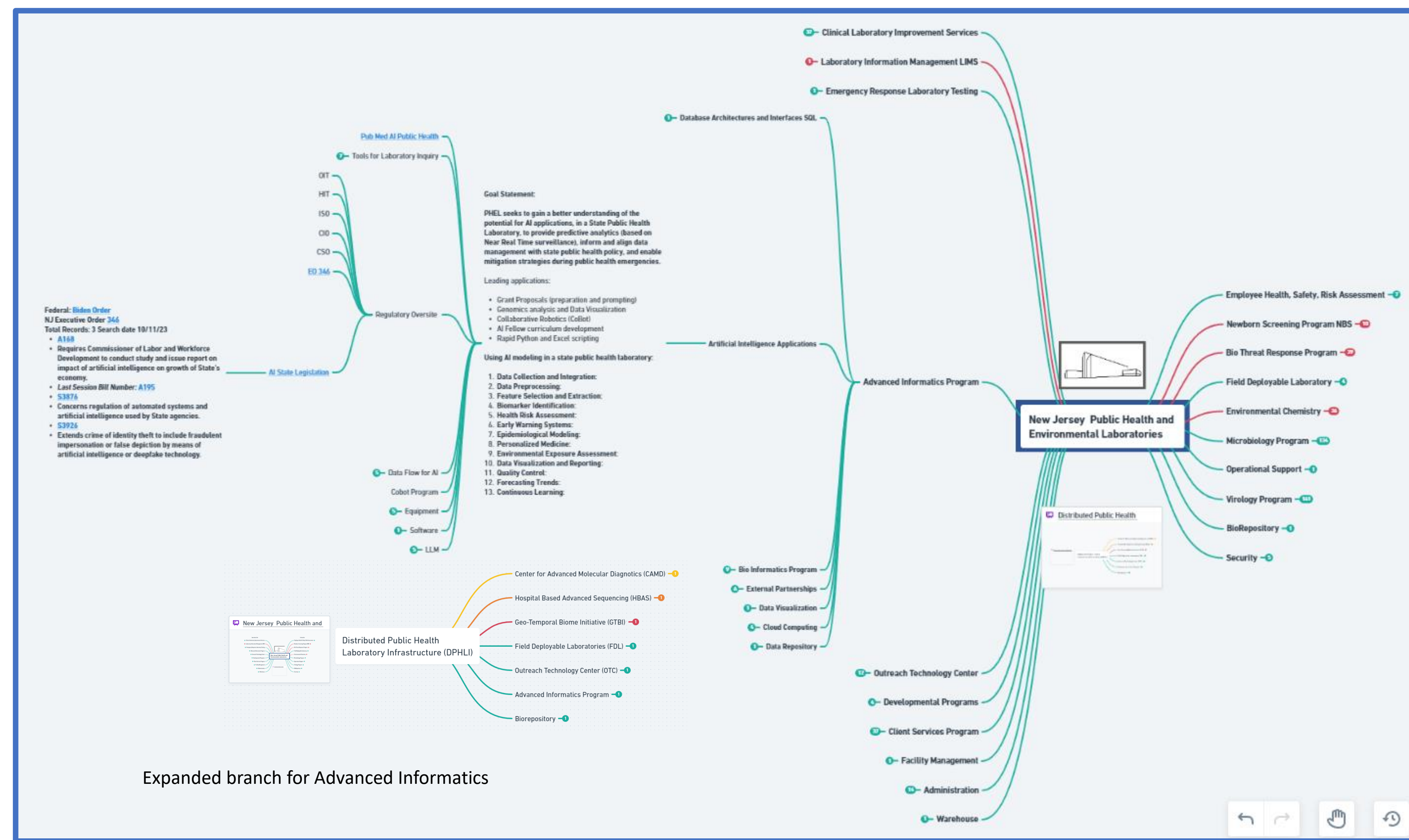
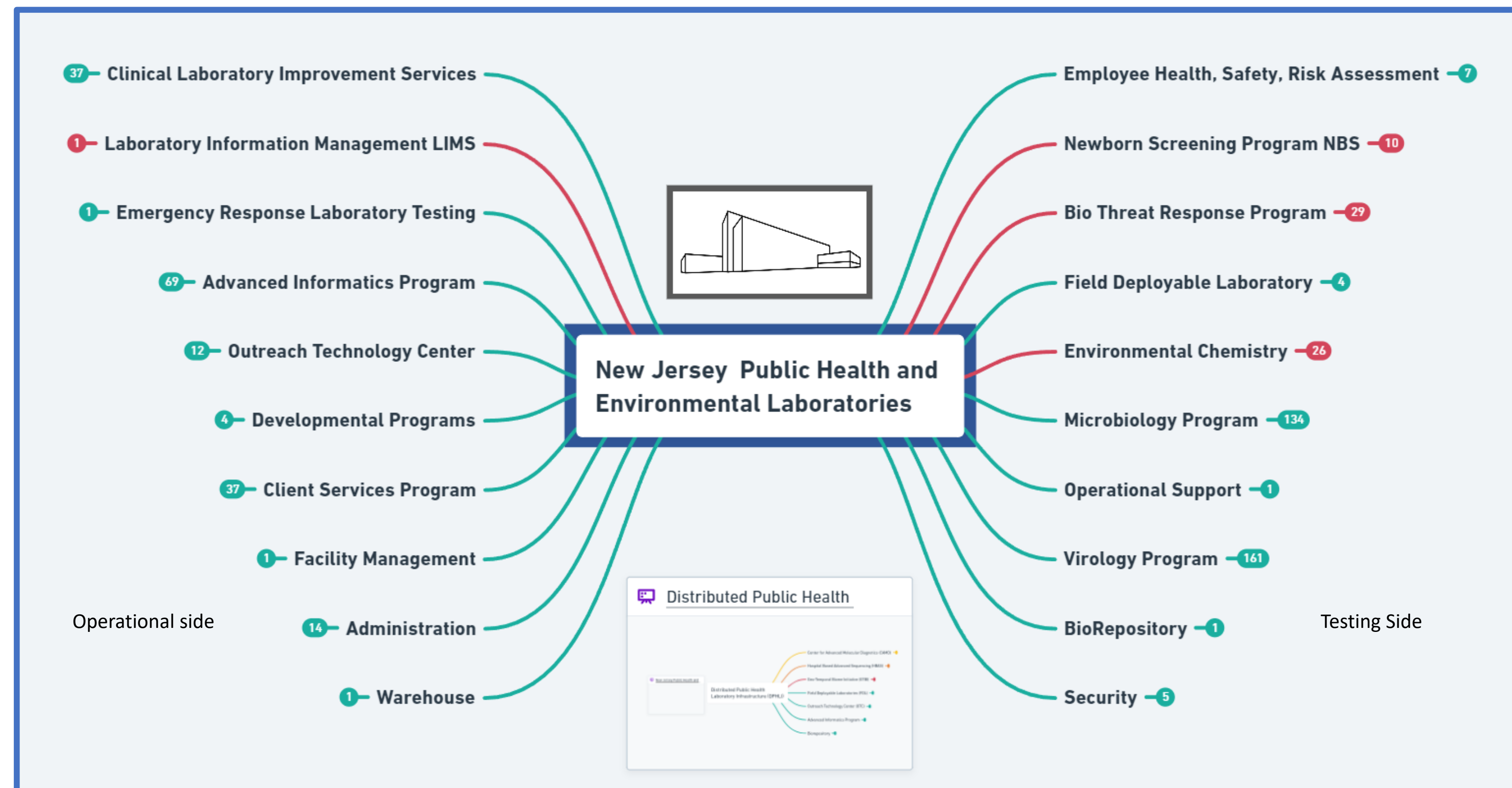
Above: Example of a Flowchart describing a process using a Flowchart. This can be reformatted As a sequence diagram or a Mind-Map. Additional branches can be added to any part of the diagram



Above: Use the embedded LLM or use your preferred LLM to rapidly generate descriptive content for any section of your Mind-Map.

Other components include: Cards, Stacks, Images, Connectors, Text, Icons, **Hyperlinks**, Sections, Predefined Searches, Generative AI for quick descriptive content and Templates.

Results



Conclusions

A Mind Map, if used to represent an organizational structure, is a new, interesting, and potentially important information management tool.

Mind Maps, Concept Maps and Visual Metaphors are distinctly different and have most often been used in various aspects of education^{1,4}. In education, their structure and size vary². In business, they have been used to support senior leadership in visualizing organizational scope³.

The current poster presents several innovative uses for Mind-Maps to render a Public Health Laboratory System as a relational information model. The Map renders the Public Health Laboratory as a flow of information from, and between, equipment, regulatory agencies, test methodologies and Division level functions. The Map is interactive, easily navigable and comprehensible.

They can 1) demonstrate relationships between different parts of complex systems, 2) allow you to interactively “travel” through any path of an organization, 3) interactive connections to other State Division’s Org-Mind-Maps.

In summary, advantages of an organizational Mind-Map, for rendering a Public Health Laboratory, as an information model, include: facilitating strategic planning, exploring relationships between information flow and organizational structure, creating enhanced Collaborative workspaces, explaining a complex organization to non-Scientists, and specific educational components of workforce development.

Forward Looking Potential for Using Mind-Maps in a PHL:

- Disease Outbreak Management and visualization**
- Interdivisional mind maps with other State Agencies**
- System Overview under the One Health Federal Initiative**
- Grants Management, portray Grant Processes**
- Linked Standard Operating Procedures**
- Data Analysis and Research Flow Mapping**
- Risk Assessment and Management**
- Enhanced Virtual Collaboration Center**
- Distributable continuously updated content**



NJ PHEL Mind-Map

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Acknowledgements

The authors would like to acknowledge Ms. K. Molnar for her efforts in organizing the ELC funded subscription for this platform.