Maximizing the Benefits of Message Mapping Guides: Data Integrity and Epidemiologists' Time

Strategic Insights

- Message Mapping Guides (MMGs) simplify, modernize, and standardize how public health agencies (PHAs) transmit disease surveillance data to the CDC.
- MMGs are complex to set up and troubleshoot, requiring deep technical expertise.
- MMGs replace manual, incomplete, or semi-automated data transmission processes—saving epidemiologists hundreds of hours for higher-priority work.
- **InductiveHealth** delivers comprehensive MMG onboarding and support, ensuring data integrity, improving surveillance data quality, and relieving epidemiologists from manual data tasks.
- **InductiveHealth** is the only public health technology provider that supports both the Electronic Disease Surveillance System (EDSS) and MMG onboarding and operations.

Framework

Message Mapping Guides (MMGs) are critical to modernizing and standardizing how state, tribal, local, and territorial public health agencies (PHAs) report disease surveillance data to the Centers for Disease Control and Prevention (CDC).

MMGs enable structured, real-time electronic disease investigation reporting via HL7 messaging. They replace outdated, manual, or semi-automated transmission methods—such as faxed case forms and batched CSV or Excel files—that are time-consuming and prone to error, while also requiring double entry and manual troubleshooting by epidemiologists.

As part of the CDC's data modernization initiative, MMGs improve the quality, timeliness, interoperability, and configurability of surveillance data. There are two primary MMG types:

- **Generic v2 MMGs** – used for reporting approximately 50 notifiable conditions.
- **Disease-specific MMGs** – customized for additional data elements relevant to specific diseases.

Obstacles

While MMGs offer major efficiency and data quality benefits, their implementation poses significant challenges for PHAs.

Maximizing their value requires considerable technical knowledge, time, and resources. Without external support, onboarding a single MMG can take a lone epidemiologist months—or even years—especially for PHAs new to HL7 reporting or without in-house informatics capacity. Even for an MMG subject matter expert, it can take hundreds of hours to onboard just one MMG.

With 20 MMGs deployed overall, when the CDC releases new MMGs, it adds additional complexity requiring continuous adaptation. The technical specificity and rigor of MMGs also present a steep learning curve, making implementation especially burdensome for already stretched public health teams.

The InductiveHealth Approach to MMGs

InductiveHealth provides hosting, technical, and database support for disease surveillance systems such as the National Electronic Disease Surveillance System (NEDSS) Base System (NBS), EpiTrax™ and InductiveHealth EDSS. These systems support case management, outbreak tracking, contact tracing, and inter-agency communication. Further, an EDSS is the primary technology used by public health agencies to administer and manage their MMG processes. InductiveHealth is the **only** public health technology provider that supports **both** the EDSS and MMG onboarding and operations.

InductiveHealth has successfully onboarded over 30 MMGs across 10 PHAs. Notably, for the CDC's recent update of the tuberculosis MMG, our team led and delivered onboarding for seven of the eight PHAs in the first cohort—demonstrating our ability to take a front seat in driving rapid and effective implementation. And for Hepatitis, InductiveHealth's MMG team supports 205 more fields than the legacy reporting functionality. Leveraging InductiveHealth's automatic MMG reporting allows PHAs to report far more in-depth data elements to the CDC, while also saving epidemiologists at least 2-3 hours a week alone compared to manually reporting via NEDSS uploads.

During maintenance and operations support, our MMG services include:
- **End-to-end onboarding and support**
- **Daily management of all outbound NND messages**
- **A dedicated team of MMG experts—no learning curve for clients**
- **Close monitoring of messages to ensure successful routing to the CDC**
- **A quick resolution of any errors that occur**

Our approach saves epidemiologists hundreds of hours annually, freeing them to focus on critical responsibilities such as data analysis, response planning, and public communication. When PHAs launch new condition-specific surveillance pages, InductiveHealth ensures any associated MMGs are considered in system configuration—simplifying future onboarding.

As part of surveillance system implementation, InductiveHealth prioritizes MMG availability and alignment with each PHA's specific needs. Our experience ensures every system is designed to include the necessary data elements from the outset, streamlining future MMG integrations.

How MMG Onboarding Improves Public Health

High-quality public health data starts with timely, accurate transmission from PHAs.

When PHAs partner with InductiveHealth to implement MMGs, they benefit from faster, more reliable, and less costly data submissions—enabling more time for contact tracing, surveillance, and community engagement.

Utilizing MMG data structures helps PHAs to improve data quality and reduce manual labor, providing time to act on received data and respond more effectively to public health threats.