



New Mexico  
Statewide Immunization Information System  
(NMSIIS)

Data Quality Improvement Plan  
(2025-2026)



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## Overview

The NM DOH Immunization Program (IP) is committed to a quality improvement (QI) program as a proven way to enhance the organization's performance to achieve desired results. A high-performing organization actively changes the way business is done by:

- Using data to analyze problems and performance.
- Actively engaging employees in quality improvement activities.
- Engaging customers and stakeholders.
- Developing solutions and improvements based on analysis.
- Implementing improvements based on data findings.
- Monitoring and evaluating performance.
- Engaging in ongoing quality improvement projects.

Reasons for high data quality within the New Mexico Statewide Immunization Information System (NMSIIS) include, but are not limited to:

- Accurate data ensures providers know when patients are due for vaccines, reducing errors and preventing under-immunization.
- Enable precise tracking of vaccination rates, identifying disparities (by race, location, etc.), and tailoring outreach to underserved communities.
- High-quality data helps quickly identify gaps in coverage, crucial for responding to outbreaks and maintaining high population immunity.
- Accurate inventory data helps manage vaccine supply, preventing waste and shortages.
- Uniqueness and accuracy prevent duplicate records and ensure correct patient identification.
- Reduces administrative burden from correcting errors and improves interoperability between healthcare systems

Incentives for good data quality within NMSIIS include, but are not limited to:

- Statewide reporting mandate (Senate Bill 58) which requires all vaccinating healthcare providers to report all vaccine data for all patients, regardless of age, to NMSIIS
- State and federal reporting of coverage rates and doses administered
- Compliance to ensure continued participation in IP Programs such as the Vaccines for Children (VFC) program
- Ensuring completeness and availability of patient official immunization records via NMSIIS or via the consumer public portal

Quality Improvement is a continuing cycle of measurement, analysis, and improvement. This plan builds on efforts at the NMIP. This plan provides a framework to assess the progress the agency has made, reinforce what's working well, and improve in the areas that are ineffective. The measures used and followed, per the Centers for Disease Control and Prevention (CDC) IIS Blueprint, include 1) Available, 2) Timely, 3) Complete, and 4) Valid.

## Current Statistics

Each year, approximately 21,000 children are born in New Mexico. Every one of these children needs 18-22 immunizations by age six to protect them from debilitating, life threatening diseases. Keeping track of immunizations can be challenging for health care professionals, parents, childcare centers, and schools.

The average family relocates multiple times over the course of a lifetime. Often, medical records and valuable immunization information are left behind.

NMSIIS is a secure, confidential, web-based database managed by the New Mexico Department of Health (NMDOH) that tracks immunization records for all ages in New Mexico, helping providers, schools, and parents manage vaccination history, avoid unnecessary vaccinations, and ensure people stay up-to-date with recommended immunizations. NMSIIS integrates data from various providers, complies with HIPAA, and generates reports, reminders, and recommendations for better public health.

Currently in NMSIIS:

- ~1500 healthcare providers participating in NMSIIS
- ~350 healthcare providers participating in the VFC program
- ~800 healthcare providers participating in automated data exchange
- ~25,000 active users
- ~3.3 million patient records
- ~43 million immunizations recorded

## **Responsibility**

New Mexico Legislation requires that the Department of Health, in conjunction with the Human Services Department, shall establish and maintain a state immunization registry. The registry shall be a single repository of accurate, complete, and current immunization records to aid, coordinate, and promote effective and cost-efficient disease prevention and control efforts.

[NMSA 24-5-7]

## **Access and Sharing**

Access to the information in the registry shall be limited to primary care physicians, nurses, pharmacists, managed care organizations, school nurses, and other appropriate health care providers including nurse practitioners and physician assistants, or public health entities as designated by the secretary of health. A managed care organization may only access information for its enrollees. Requests for access to the registry shall be made by a provider in writing to the division and access shall be determined by the division. No person or automated system may access or attempt to access the registry without approval from the division. At the division's discretion, access may be modified. A patient, or a patient's parent or guardian if the patient is under the age of 18, may access the patient's records.

[NMAC 7.5.5.13]

In July 2019, NMSIIS implemented a public consumer portal for parents, guardians, and patients to access immunization records, **VaxView** ([vaxview.doh.nm.gov](https://vaxview.doh.nm.gov)). The public portal is convenient and eliminates the need to carry multiple or aged documents. It can be accessed through multiple smart devices, including computers, laptops, tablets, and phones. The public portal allows access to previous NM residents who may have moved to a new state and need to access their immunization records without being in the state. These records can be saved by taking a screenshot, sharing, uploading, and/or printing. The process for accessing the portal is user friendly and is extracted from NMSIIS by using the patient's demographic information. This includes first name, last name, date of birth, gender, and current cell phone number or email address. As a security measure, demographic information in the public portal must match what is in NMSIIS. After submitting that information, an authentication code is sent to the current cell phone number or email address used. By using this two-factor authentication via text messaging or email to validate patient, parents or guardian information, the public portal remains secure and confidential. After three unsuccessful attempts to find a vaccination record, the system locks the user out for thirty (30) minutes. We have found the public portal to be an excellent time-saving benefit for administrative users, providers, clinics, schools, and the public. Multiple enhancements for the consumer portals functionality were completed in 2023. One aspect of this enhancement was that the

portal is now available in both English and Spanish. As of December 2025, successful attempts to access the public portal are above 65%, which is an improvement of over 40% since implementation.

## Assessment of Current Data Quality

Profiling and other forms of assessment will identify unexpected conditions in the data. A data quality issue is a condition of data that is an obstacle to a data consumer's use of that data- regardless of who discovered the issue, where or when it was discovered, what its root cause(s) are determined to be, or what the options are for remediation. Data Quality Issues and Data issue management is a process of removing or reducing the impact of obstacles that prevent effective use of data. This process includes identification, definition, quantification, prioritization, tracking, reporting and resolution of issues.

## Data Quality and Data Issues

This section shall be updated annually to ensure data quality issues and information is accurate, applicable, and current.

### 1. Duplicates

- a. **Background:** Most data systems and registries, especially those with a large amount of user interaction, have a common problem of duplicate patient record creation and propagation for a simple reason: there is no unique identifier associated with any given patient which can be used for positive identification. Instead, identification and selection of patient records for update is dependent on searching existing records for a match using other attributes (such as names, date of birth, gender), and depending on the completeness and consistency of both the existing data and incoming search criteria, search reliability can vary wildly. In the end, though, if a high-confidence match cannot be made, a duplicate must be created to avoid corruption of personally identifiable information (PII) and protected health information (PHI).
- b. **Quantification:** In 2019, with the change to the algorithm and diligent manual de-duplication efforts, the NMSIIS program successfully eliminated long-standing duplicate records in the system (for reference, in 2018, the number of duplicates in the IIS exceeded 80,000) As of December 2025, the duplicates identified in the system are less than 200 records generated daily.
- c. **Prioritization:** Due to the impact of immunization rates on public health decisions and current vaccine preventable disease outbreak likelihood, this issue is a **HIGH** priority.
- d. **Identification:** As of December 2025, the current threshold for identifying potential duplicates patients within NMSIIS is set at 90%. These algorithms use demographic information for patients in the immunization registry to make potential duplicate matches such as first name, last name, DOB, gender, street/city/county/state address, phone number, race, and ethnicity.
- e. **Tracking:** The number of duplicate instances are currently evaluated through the NMSIIS duplicates module. Automated jobs run on a regularly scheduled basis to match and resolve potential duplicates. Additional efforts are also made by running potential duplicate reports and manually comparing potential duplicate patient records for resolution.
- f. **Resolution:**
  - i. Reporting infrastructure has been established and is being utilized to track the trend of duplicates created in the system to determine the efficacy of changes made over time.
  - ii. Processes used for searching in the user interface, the HL7 engine, and other data feeds so that matches are performed consistently have been aligned and should be monitored and improved when possible.
  - iii. Implementation of a standardized approach for handling special characters in names during search should be completed and routine training for NMSIIS users should include this process.

- iv. Address validation system (Smarty) has been implemented and maintained to complete patient matches based on geo-coordinates rather than text values, which aligns addresses with USPS recommendations.
- v. A parameterized version of the current duplicate scoring algorithm has been created, making it possible for modifications to be made by jurisdiction staff.
- vi. A mechanism for jurisdiction staff to modify the sensitivity for duplicate detection, and to clear suspect duplicates globally between runs has been created and implemented. This should be routinely monitored and assessed.
- vii. An audit trail infrastructure for granular tracking of the changes to a patient record has been implemented, ensuring every change to a patient record within NMSIIS can be tracked back to its source, and further training and/or discussion will occur to reduce the likelihood of the creation of a duplicate record.
- viii. The revised matching criteria should be leveraged to automatically merge and clean up the duplicates within NMSIIS.
- ix. Routine monitoring and assessment of the current patient matching algorithm ( $A+B=C$ ) should be conducted to ensure accuracy.
- x. Routine monitoring and assessments should be made of the automated data quality cases that each identified specific standards used to identify duplicates in the system (i.e. Case 1 looks at patient name and DOB whereas other cases utilize patient mother's maiden name or phone number). As future cases are created and become available, the NMSIIS staff should determine if they would be beneficial to implement within the existing automated data quality case processing.
- xi. Data at Rest should be evaluated annually using the existing process provided by AIRA (<https://www.immregistries.org/data-at-rest>) to analyze provider data quality, compare to previously established benchmarks for completeness, timeliness and validity in data submitted to the IIS, and ensure routine communication is completed to provide assistance to healthcare providers, remove potential barriers and transition providers to data exchange reporting for patient and vaccine data.

## 2. Newborn Generic Patient Place Holder Records

- a. **Identification:** Newborn patient records are often created within the registry under false/place holder names and NMSIIS is unable to match these names to the incoming vital records feed.
- b. **Background:** New Mexico's birth cohort is ~21,000 annually (birth rates declining within the last five years) with a live feed from the New Mexico Bureau of Vital Records and Health Statistics. A live feed of new births reported to the New Mexico Bureau of Vital Records and Health Statistics is received by the registry on a weekly basis. Once NMSIIS receives the data, it evaluates all patient records to identify a match within the system. If a match is found, the registry updates the record as necessary. If no match is found, the registry creates a new patient record. In certain instances, due to internal provider practices, newborn names are not entered into the EHR or NMSIIS immediately after birth. Instead, these practices will create the newborn patient record with a generic name i.e., "Baby Boy" "Girl Sanchez". As a result, when the feed from the New Mexico Bureau of Vital Records and Health Statistics is received at the registry there is insufficient matching criteria available for the system to match and the registry will inevitably contain multiple patient records for the same patient.
- c. **Quantification:** As of December 2025, there are over 5,000 patient records that contained a form or reference to "Baby" or a similar acronym in the patient's name.
- d. **Prioritization:** Due to the impact of child immunization rates and their impact on public health decisions, this issue is a HIGH priority.
- e. **Tracking:** Ad-hoc reports run a monthly basis by the NMSIIS Epidemiologist and shared with the NMSIIS Data Quality Assurance Coordinator.

- f. **Resolution:** Once a patient record is identified with a generic name the NMSIIS staff will, through a manual searching process, seek to identify the correct patient name and merge the records.

### 3. User Account Maintenance

- a. **Identification:** The need exists to maintain user account status and create a uniform identifier to differentiate between user types
- b. **Background:** User accounts are created in the registry for multiple purposes including users actively participating in submitting, viewing, maintaining patient and immunization records, providing access to EMR/EHR HL7 reporters, and/or assigning non-users as prescribers or administrators of vaccine. Failure to maintain access points to the registry may impact data integrity and patient information.
- c. **Quantification:** There are over 25,000 active user accounts in the registry
- d. **Prioritization:** Moderate Priority
- e. **Tracking:** The number of user accounts will be evaluated through the NMSIIS Users report on a monthly basis
- f. **Resolution**
  - i. Define user types: global user, basic user, read only user, non-interactive user
  - ii. Utilize existing reports to identify potential identifiers that can be used to differentiate between user types (basic user, read only user, etc.)
- iii. Monthly user inactivity job is run resulting in identifying and inactivating a user account because the user has/had not signed into NMSIIS in over 12 months.

### 4. Data Exchange Provider and Data Submission Management

- a. **Identification:** The need exists to ensure that data exchange providers are actively maintaining their connection to the registry.
- b. **Background:** To be truly interoperable with other information systems, such as other IIS or electronic health records (EHRs), three layers—the application layer, data exchange layer, and messaging layer—must be in place and use well-defined and accepted standards. Providers with electronic systems that are compatible with the division's data exchange program may request to receive approval to utilize the compatible system for reporting the required data elements to the IIS. Providers using data exchange reporting must utilize the file format approved by the division and are responsible for all associated costs. Providers using data exchange reporting must update their systems to maintain compatibility with the division's data exchange program as necessary to maintain the integrity of the data transfers.
- c. **Quantification:** There are currently over 800 providers participating in data exchange, utilizing various EMR/EHR platforms and versions.
- d. **Prioritization:** Moderate priority
- e. **Tracking:** The NMSIIS Data Exchange Coordinator is responsible for utilizing the Dashboard and Analytics module embedded within NMSIIS as a tracking method to ensure all data exchange providers are maintaining their connection to the registry. The module checks the HL7 Message Log to determine the number of days since the active data exchange provider has reported data to the IIS using HL7 messaging, either to submit VXUs (unsolicited vaccination update) to NMSIIS or to query data from NMSIIS via QBP (query by parameter) messages. The NMSIIS Data Exchange Coordinator will then reach out to the point of contact for the provider location and/or EHR vendor to determine if they are 1) continuing to vaccinate patients, 2) having connectivity issues between their EHR and NMSIIS, 3) needing to troubleshoot HL7 message formats or other cross walk issues that may be preventing data to transfer successfully to the patient record in the IIS.

- f. Resolution:** It is the responsibility of the NMSIIS Data Exchange Coordinator to ensure the data exchange feed is up and stable, while working with providers and/or EHR vendors to ensure successful data exchange transmissions.
- g. Data Quality**
- i. Conduct traffic analysis within the NMSIIS HL7 Message Log on a daily basis; contact providers submitting failing HL7 messages for troubleshooting and resolution
  - ii. Provide specific details via email for the data exchange providers regarding data quality issues and suggest steps to correct inaccurate data.
  - iii. Provide proof of interoperability participating for data exchange locations, upon request. This includes information on the number of queries received and messages sent through NMSIIS as well as how many errored, failed, and were successful. Proof of interoperability documents are only provided using information from the production environment.
  - iv. Create and send quarterly Interoperability Newsletters to existing distribution groups which include participating data exchange providers and EHR vendors
  - v. Maintain and update HL7 Resources and Documentation located on the NMSIIS website (<https://www.nmhealth.org/about/phd/idb/imp/siis/dte/>), including:
    1. HL7 Onboarding Manual
    2. Provider and EHR Information Sheet
    3. HL7 Data Submission and Data Quality Guide
    4. Data Exchange Terms and Acronyms
    5. NMSIIS Automated Data Exchange Transmission Guide
    6. HL7 Field and Segment Quick Reference Guide
    7. Interpreting ACK Messages
    8. NMSIIS HL7 Error and Troubleshooting Guide

#### **Data Quality On-Going Efforts for Patient and Vaccine Data:**

Duplicate Vaccines	Duplicate Patients	Baby Names
Expired Doses	Impossible Vaccine Dates	Vaccine Date Before DOB
Missing Contact Patient Data	Missing Address/County	Dose Added, Not Administered
1900/1901 as DOB	Invalid Doses	Fake/Invalid/Test Data
Vaccine Type Incorrect for Age	Missing Vaccine Data	Address Validation
Nickname vs Legal Name	Special Characters	Data at Rest
Vaccine Date After Exp Date	Missing Demographic Data	Delayed Reporting
Age Over 100 Years	Providers Creating Duplicates	Non-Compliance Reporting

#### **Retention**

Records retention and disposition schedules are established at the agency level. They enable state agencies to systematically manage their records and information by specifying how long state records must be maintained and their final disposition. The retention schedules are developed by using the data compiled in the records inventory, researching legal sources such as state and federal statutes, and discussing the records and information needs of an agency with its records custodians, staff, and legal counsel. The scheduling process is ongoing and involves the cooperation of an agency's records custodian, liaisons, and legal counsel.

#### **Data Use and Privacy**

NMSIIS data is confidential under both state and federal law including the Health Insurance Portability and Accountability Act (HIPAA) and the Health Information Technology for Economic and Clinical Health Act (HITECH). Breach of confidentiality requirements may subject the organization and/or user to termination from participation in the NMSIIS and may result in civil or criminal penalties for



improper disclosure of health information. Protecting the privacy of individuals and the security of information contained in the NMSIIS is a high priority. The information contained in the NMSIIS shall only be used for the following purposes:

- To ensure that the registrants receive all recommended immunizations in a timely manner by providing access to the registrant's immunization record.
- To improve immunization rates by facilitating notice to registrants of overdue or upcoming immunizations; and to control communicable diseases by assisting in the identification of individuals who are at risk or who require immediate immunization in the event of a disease outbreak. Any other use of NMSIIS data is prohibited and no person shall attempt to or allow another person to access or copy data.
- NMSIIS data shall not be disclosed to unauthorized individuals or entities, including law enforcement, without the approval of the NMSIIS Program Manager. All subpoenas, court orders, and other legal demands for NMSIIS data received by any authorized user or organization must be immediately brought to the attention of the NMSIIS staff.

## **Storage and Backup**

Azure Government Cloud Hosting:

- Azure confidential computing protects the confidentiality and integrity of IIS data.
- A contracted vendor, Envision Technology Partners, Inc. is responsible for managing NMSIIS cloud hosting, system and data backups, and securing the necessary software and Azure Government Cloud infrastructure to support four Azure environments and one internal environment for the registry.

## **Resources**

[CDC Data Quality Blueprint](#)

[AIRA MIROW Data Quality Mini Guide](#)

[Senate Bill 58](#)

[New Mexico Administrative Code \(NMAC\) 7.5.5](#)

[NMSIIS Reporting Requirements](#)