

SEER Data Management System (SEER*DMS)

<http://seer.cancer.gov/seerdms>

Overview

SEER*DMS supports all core functions of a central cancer registry. The centralized system design and development improves data quality and consistency, increases efficiency, and reduces registry operation costs. All aspects of the system can be customized to meet the needs of individual registries.

The SEER* DMS workflow engine moves data and tasks from one person to another based on the registry's business rules. Automated tasks are handled seamlessly by the system. Procedures that require human intervention are held as a manual task for completion by a user. Routing decisions are made declaratively in configuration files. The XML construct allows the SEER*DMS workflow to be easily customized for each registry.

SEER*DMS users interact with the registry's database through a web browser interface. This design reduces maintenance of individual workstations by providing a mechanism for delivery system upgrades to all registry desktops simultaneously.

Editors and coders view and update the data through an intuitive graphical interface. Specific tasks are assigned to their user accounts. Registry managers can easily monitor and re-distribute the workload.

Automatic and Timely Compliance to New Standards

SEER*DMS provides a single solution to problems that all registries face. System "polishers" are used to implement algorithms for Collaborative Stage, NHIA, NAPPIA, the Census Tract Poverty Code, and many other derived fields. New versions of the NAACCR Data Standards are implemented in SEER*DMS in January of the year in which they go into effect. The SEER*DMS development team works closely with standard setters to beta-test algorithms as they are developed. This ensures the timely deployment of new algorithms and standards.

Real Time Geocoding

Geocoding and address standardization are automatically executed whenever an address field is changed. SEER*DMS submits secure API calls to AGGIE geocoding system provided by Texas A&M, NAACCR, and NCI. Census tract fields, latitude, longitude, and other geospatial variables are set for each valid address. Real time geocoding using the AGGIE system provides high quality data at no cost to NAACCR Full Member Registries.

Reports and Analysis

SEER*DMS includes a variety of integrated reports which summarize registry activities, track data through the system, and provide quality control and completeness metrics. Research and technical staff can write ad hoc queries using SEER*DMS Data Search. The Data Search provides an interface to define complex search criteria based on Boolean expressions and to execute SQL statements. Data Search can be written to extract files.

Research Oriented Database

SEER*DMS uses a PostgreSQL relational database. Registry research and technical staff can use a variety of integrated tools to access data or they can use external SQL compliant software to analyze or extract data.

SEER*DMS registries have designed systems and performed analysis using SAS, SQL query and reporting tools, Microsoft Access, Perl, and a variety of other programming languages.

SEER*DMS Test Systems

A separate test copy of SEER*DMS is available to each registry. The test system allows the registry to test new types of data received at the registry, train new employees, prepare for new data standards prior to production deployment, and review new versions of SEER*DMS.

SEER*DMS Edits

Patient data are validated against standard edit sets and edits written by registry staff. The SEER*DMS Edits module is a robust tool for writing, testing, and managing edits. SEER, NPCR, NCDB, and NAACCR Call for Data edits are maintained and updated in a timely manner. The SEER*DMS interface allows the registry to deactivate individual edits.

SEER*DMS includes a full edits manager that allows registry staff to create and test edits. The coder can review a list of failing edits as they review and code a case. The edits are automatically refreshed whenever the data are changed.

Data Submissions and Extracts

SEER*DMS provides a push button mechanism for creating data submission files required by standard setters such as NAACCR, NPCR, and SEER. Data requirements are reviewed and updated each year. Ad hoc extracts can also be created in the NAACCR file format for any subset of cases. The confidential, full case and incidence record layouts are supported. In addition, SEER*DMS includes pre-defined extracts for standard linkages such as NDI and SSA.

Appliance Solution

SEER*DMS is a turnkey tumor registration appliance. It provides the registry with a complete solution that features:

High up-time

- Technical support team notified in real time for system errors and warnings
- Monitoring mechanisms to proactively identify conditions that may lead to system failure
- Redundant hardware components

Robust data restoration capabilities

- Use of NetApp file system leveraging snapshots to maintain 128 hourly restore points on-line
- Production data copied to the secondary data center multiple times per day to minimize data loss in the event of a disaster
- Maintenance of database transaction logs to facilitate point in time recovery (PITR) more granular than just "top of the hour"

Reduced maintenance responsibilities & costs

- Built on open source products such as Linux and PostgreSQL to eliminate licensing fees
- Technical support team manages all operating system and SEER*DMS software updates and maintains the database

Minimal Disruption to Existing IT Infrastructure

- System engineers devise a plan to integrate the appliance with existing IT infrastructure
- No registry responsibility for database security, backup, or system maintenance
- Browser-based interface to minimize client PC requirement

Contact Information

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