



SURVEILLANCE RESEARCH PROGRAM

The SEER Data Management System (SEER*DMS)

Overview

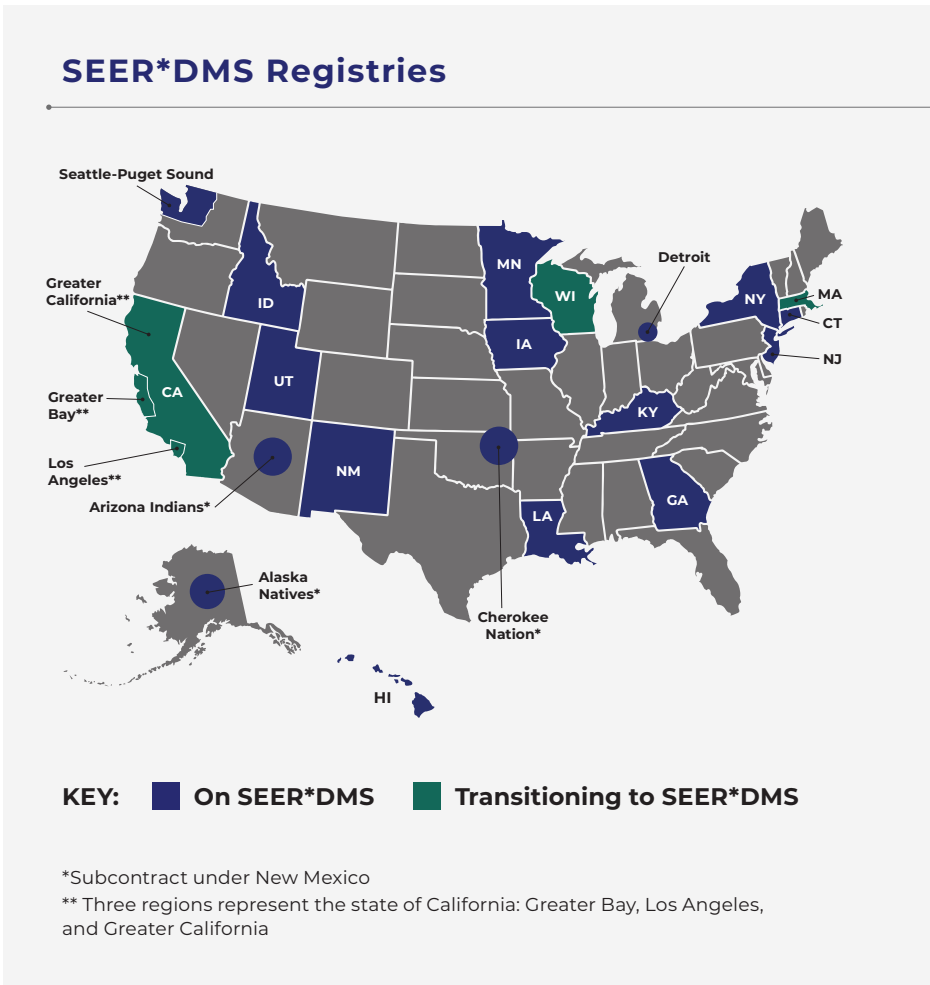
SEER*DMS supports all core functions of a central cancer registry. Currently, SEER*DMS supports 16 central cancer registries (Figure). The Surveillance, Epidemiology, and End Results (SEER) Program funded the development of the SEER Data Management System (SEER*DMS) in 2000. Since the first deployment of the system in 2005, it has been utilized by central cancer registries to process and submit cancer data to the SEER Program. SEER*DMS also supports core functions including importing, editing, linking, and consolidating data and producing reports. 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. Since 2011, the SEER Program has taken steps to invest in and implement enhancements to SEER*DMS.

The SEER*DMS workflow moves source data from one task 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.

SEER*DMS users interact with the registry's database through a web browser interface that 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 redistribute the workload.

SEER*DMS Registries



SEER*DMS Change Control Advisory Board (CCAB)

The SEER*DMS Change Control Advisory Board (CCAB) is the SEER*DMS steering committee for change management. The CCAB evaluates plans and proposals submitted by its membership for all significant changes and enhancements to SEER*DMS, including the development of new features and changes to algorithms, database structure, and hardware infrastructure. Participants include representatives from registries currently using SEER*DMS, in transition, or considering a transition to the system, as well as members of the SEER*DMS development team and NCI representatives. The CCAB meets on a semi-monthly basis via teleconference.

SEER*DMS Face-to-Face (F2F) Meeting

The SEER*DMS F2F Meeting brings together registry experts from across the country. Participants discuss SEER*DMS initiatives that aim to support the development and enhancement of tools and processes for the cancer registry community. F2F provides a forum to discuss registry-specific insights, considerations, and barriers regarding the development initiatives. It aims to provide clarity and foster communication among all SEER*DMS stakeholders.

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 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, the National Program of Cancer Registries (NPCR), National Cancer Database (NCDB), and the North American Association of Central Cancer Registries (NAACCR) Call for Data edits are maintained and updated in a timely manner.

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.

Real Time Geocoding

Geocoding and address standardization are automatically executed whenever an address field is changed. SEER*DMS submits secure API calls to the 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.

SEER*DMS Initiatives

Advancements in the health informatics landscape and cancer surveillance drive the need for enhancements to SEER*DMS. The SEER Program is increasing its volume and variety of data with new integrations around cancer diagnostics, treatments, and outcomes. To ensure the system can support advancements in informatics and cancer surveillance, program initiatives focus on enhancing system aspects such as automation, natural language processing, acquisition and linkage of new data sources, data visualization, new informatics tools and methods, and more. Initiatives underway are detailed below.

Usability Initiative

This high-priority SEER*DMS initiative incorporates user-centered design practices into the SEER*DMS platform to enhance the user interface and overall user experience. The SEER*DMS usability initiative aims to align platform features with current registry workflows so that the system conforms with future technical changes.

Reports and Analysis

SEER*DMS includes a variety of integrated reports that 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.

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