Centers for Medicare & Medicaid Services: The Integrity of Healthcare Data and Secure Payment Processing

About CMS

The Centers for Medicare & Medicaid Services (CMS) is part of the Department of Health and Human Services, covering 100 million Americans through Medicare, Medicaid, the Children's Health Insurance Program, and the Health Insurance Marketplace. A Teradata customer since 2005, the goal of CMS is to achieve a high quality health care system—one that's focused on better care at lower costs and improved health.

Teradata customer since 2005

Integrated, analytics-driven platform delivers powerful insights into claims lifecycle, and new analytics that define CMS business practices.

The Business Challenge

CMS is tasked with managing an ever-increasing amount of data that includes information on eligibility, coverage, claims, beneficiaries, providers, encounters, and more. Without sufficient tools to fully understand the massive amounts of data, there is an increased risk for fraud, waste and abuse—driving demand for a new kind of data analytics and reporting capability.

The majority of claims that funnel through CMS include Medicare Parts A, B, C, and D, plus Durable Medical Equipment (DME)—all susceptible to the risk of improper payment activity. Claims are also processed in regional centers, which makes it nearly impossible to obtain a single, nationwide view of approximately 4.5 million claims and $1.3 billion paid out each day. Federal mandates placed on the agency and good fiscal stewardship required action.

The goal was to create a consistent, reliable, secure, enterprise-wide view of claims data—available to all users—to deliver quality healthcare more effectively, and quickly identify fraud, waste and abuse. CMS needed a high-volume data warehouse solution that integrated claims, beneficiary, and provider data sources—along with ancillary data like contract, geographic location

information, and risk scores—to create an enterprise resource that broadens visibility into the beneficiary lifecycle, claims activity, provider information, and more. CMS also needed a solution that could serve as the system of record for the country's Medicare Part D drug program.

The Teradata Solution: CMS Integrated Data Repository

Teradata delivered the Integrated Data Repository (IDR), a unified technology platform that allows CMS to aggregate, view, analyze, and report large volumes of data at a granular, transaction level—while providing greater visibility into the claims lifecycle. The IDR is a centralized, scalable, 1-petabyte, enterprise-wide data warehouse that enables comprehensive reporting, investigation, and analysis by CMS and the research community.

A centerpiece of the CMS Enterprise Data Warehouse strategy, the IDR includes Medicare Parts A, B, C and D entitlement, DME, enrollment and utilization data from January 1, 2006, as well as supporting reference data. It is designed to establish an enterprise resource that provides one integrated view of all CMS data for administering the Medicare and Medicaid programs

The Results

Ten years have passed since the IDR went into production with the implementation of the Part D program. In 2006, it began as a small 9-terabyte system supporting five users. Today, the IDR has grown to a high-end, 1-petabyte Teradata system complemented by a customer-provided 333-terabyte Hadoop system. The system now supports 48 programs and projects, along with 42 major data sources and utilities for more than 2,400 users.

TERADATA

The Teradata IDR allowed CMS to transition from stove-piped, disparate databases to a single, integrated data environment for the enterprise. The result means CMS analysts can now understand beneficiaries from more than a single claim type perspective, expanding their insights across multiple claim types and other related claims data—drug, institutional, clinical, shared systems, and encounters—as well as plan payment, beneficiary, provider, drug reference, contract/health plan, and reference data (e.g., procedure and diagnosis coding, geography). The ability to analyze all the data together provides powerful new insight into CMS customers.

> The Teradata IDR solution provides greater insight into claims data, allowing CMS to process and pay claims with less fraud, waste, and abuse.

CMS users can now drill down into claims and beneficiary information further than ever before, and glean a much broader, more detailed view of the claims lifecycle. New capabilities include:

- Analytics across all programs supported by consistent, timely data

- Risk scoring and analysis

- Complex utilization and reporting analysis

- Ability to meet federal program mandates for Program Integrity; help ensure accuracy and reliability of data for fraud, waste, and abuse investigations

- Improved ability to track current program trends and identify fraud schemes

- Heightened security of healthcare data

- Integrated Medicare and Medicaid data

Looking Ahead

The IDR continues to breathe new value into the volumes of data CMS collects and processes every day; for example, providing the flexibility needed to accommodate the rapidly changing needs of new payment structures. Users and the research community alike are now empowered to ask new questions, anticipate need, stay ahead of fraud risk, and serve their constituents better than ever before. These powerful new data and analytics capabilities are also helping to process and answer more complicated queries, and continue to expand the base to include new data sources such as Medicaid Encounter, Master Data Management-sourced Provider, and transformed Medicaid claims, provider, eligibility, managed care, and third-party liability data.

Our continued partnership is focused on helping CMS achieve expanded insight even earlier in the claim lifecycle, providing transparency into the full claims review process as they gain greater insights from evolving data demands.

To learn more about the Teradata IDR solution for CMS, contact Joe Allen at joe.allen@teradata.com or visit Teradata.com/government.

IDR Features
- True analytic and reporting capabilities
- Scalability to meet current and expanding CMS data volumes
- Uniform privacy and security controls
- Capability for users to analyze data in place, rather than relying on data extracts
- Integrated claims data from diverse sources, such as Medicare and Medicaid

IDR Advantages
- Integrated platform; one-stop shop
- Prevents duplication of data
- Single version of the truth
- Ease of access
- Faster retrieval times
- Reduced data latency
- Rapid response to legislative inquiries

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