TRANSFORMING A LEGACY REPORTING PROCESS INTO AN AUTOMATED BUSINESS INTELLIGENCE PLATFORM

How a Healthcare Staffing Organization Unified Disconnected Systems, Restored Trust in Reporting, and Automated Operational Visibility

Presented by

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with

Barnaby the Data Ferret™
Ferreting Out the Truth in Numbers™
Following the trail from report to source

Executive Summary

A healthcare staffing organization operating across New York City, Westchester County, New Jersey, and Maryland relied on a 10-year-old Microsoft Access reporting environment, multiple vendor systems, manual report generation, and spreadsheet-based scorecards to manage daily operations.

More than 300 nurses, caregivers, managers, and executives depended on operational, patient, payroll, billing, and management reports that required significant manual effort to produce, consolidate, validate, and distribute.

By designing a centralized SQL Server reporting platform, automating data collection from multiple vendor systems, standardizing reporting logic, and implementing enterprise reporting infrastructure, the organization gained a single source of truth for operational and management reporting.

Business Challenge

The Surface Problem

At first glance, the organization appeared to have a reporting problem.

Administrative staff spent significant time responding to report requests from nurses, caregivers, managers, and executive leadership. Reports were manually generated throughout the day and distributed across multiple offices.

Obtaining operational information often required:

- Running multiple reports
- Exporting data from separate systems
- Copying and pasting data into spreadsheets
- Recalculating statistics manually
- Emailing results to management

The Real Problem

The deeper challenge was visibility and trust.

Critical operational information existed across multiple independent platforms:

System	Purpose
MatrixCare	Clinical & Operational Data
HHA Exchange	Staffing & Caregiver Operations
HealthMEDX (now Netsmart)	Patient & Operational Management
Microsoft Dynamics GP	Payroll
Billing Systems	Financial Reporting

Each system used different structures, terminology, business rules, and reporting methods.

Management lacked a centralized reporting environment capable of comparing information across systems.

Investigation & Discovery

Before automation could begin, the existing reporting environment required extensive investigation.

The objective was simple:

Follow each reported metric back to its source.

Initial analysis focused on:

- Existing reports
- Data sources
- Report dependencies
- Spreadsheet calculations
- Manual workflows
- Operational bottlenecks

The investigation revealed:

✅ Significant manual effort devoted to report preparation

✅ Multiple disconnected systems

✅ Existing SQL Server infrastructure that was largely unused

✅ SAP BusinessObjects software that had never been fully leveraged

✅ Reporting logic embedded within spreadsheets and manual processes

✅ Critical business metrics that could not easily be traced back to source systems

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Reverse Engineering the Data Environment

The first major challenge involved understanding how data was represented across multiple vendor platforms.

No centralized documentation existed describing:

- Required reporting fields
- Relationships between systems
- Calculation methodologies

- Data structures
- Metric definitions

Each system had to be reverse engineered to determine:

- Which fields were actively maintained
- Which information supported reporting requirements
- How operational statistics were calculated
- Which exports could be trusted

Data Acquisition Architecture

MatrixCare

MatrixCare provided nightly SQL Server backup files (BAK).

Automated processes transferred backups to the reporting server, restored the databases, and extracted required information for reporting purposes.

HHA Exchange

HHA Exchange generated nightly CSV extract files.

These files were originally downloaded manually through FTP and processed using spreadsheet workflows.

Automated FTP retrieval and SQL Server import procedures eliminated the manual process.

HealthMEDX (now Netsmart)

HealthMEDX maintained its own SQL Server environment.

Custom SSIS exports were developed to extract information from selected tables and views required for reporting.

The resulting exports were delivered through FTP and imported into a dedicated SQL Server reporting database.

Data Mapping & Standardization

Once the systems were understood, the next challenge was creating a unified reporting model.

Although multiple systems contained similar business information, each platform used different:

- Field names
- Table structures
- Business definitions
- Reporting conventions
- Relationships

Many reporting concepts existed in all three systems but used different naming conventions and structures.

To create a consolidated reporting platform, significant effort was devoted to:

- Mapping equivalent fields
- Standardizing terminology
- Creating transformation logic
- Developing substitution rules
- Building union-based reporting structures
- Validating metric calculations

The objective was to create a reporting environment where management could compare information consistently across all systems.

Building the Reporting Database

A centralized SQL Server reporting database was developed to serve as the organization's single source of truth.

The consolidated environment integrated:

- MatrixCare
- HHA Exchange
- HealthMEDX

- Payroll Data
- Billing Data

For the first time, operational, patient, staffing, payroll, billing, and executive reporting information existed in one reporting platform.

Automated Data Integration

A complete overnight automation framework was developed.

Nightly Processing Cycle

3:00 AM

Automated batch processes:

- Open FTP sessions
- Download source files
- Transfer vendor data
- Restore databases
- Import data
- Execute SQL Server Agent jobs
- Run stored procedures
- Refresh reporting tables

6:00 AM

Automated reporting processes:

- Generate PDF reports
- Generate CSV exports
- Refresh management scorecards
- Deliver reports via email
- Publish reports for self-service access

All reporting data was refreshed before employees arrived for work.

Unlocking Patient Reporting

One of the most valuable outcomes involved patient-level reporting.

While patient data existed within vendor platforms, management often could not easily access or analyze the information without extensive manual effort.

Obtaining patient statistics typically required:

- Multiple report exports
- Spreadsheet processing
- Copy-and-paste consolidation
- Cross-system validation

A new push-button reporting solution was created that allowed management to generate patient reporting automatically from centralized data sources.

Information that had previously taken hours to assemble became available on demand.

Business Intelligence Enablement

The organization already owned SAP BusinessObjects but had not fully integrated it into daily operations.

The modernization initiative transformed the platform into a true business intelligence environment.

Users gained:

- Self-service reporting
- PDF exports
- CSV exports
- On-demand operational reports
- Executive reporting access
- Historical reporting visibility

Scorecard Validation & Trust Restoration

The organization maintained management scorecards used across multiple offices.

When reporting calculations were rebuilt directly from source systems, discrepancies appeared between automated results and historical spreadsheet-based reporting.

Further investigation identified common issues including:

- Hard-coded values

- Legacy spreadsheet formulas
- Manual adjustments
- Formula drift over time
- Inconsistent calculation methods

The same patterns appeared within:

- Operational reporting
- Patient reporting
- Payroll reporting
- Billing reporting

By rebuilding calculations from source systems and standardizing reporting logic, management gained more reliable and transparent reporting.

Results

Operational Improvements

- ✅ Automated reporting for more than 300 healthcare professionals
- ✅ Eliminated repetitive report requests
- ✅ Reduced manual data collection
- ✅ Standardized reporting across multiple locations
- ✅ Automated daily and weekly report distribution

Improved Visibility

- ✅ Centralized operational metrics
- ✅ Centralized patient reporting
- ✅ Centralized payroll reporting
- ✅ Centralized billing reporting
- ✅ Executive visibility from a single reporting environment

Trust Restoration

Perhaps the most important outcome was the restoration of confidence in reporting.

The project transformed multiple versions of the truth into a single source of truth.

Management could now trace reporting metrics back to their original source systems.

Information became consistent, repeatable, transparent, and available when needed.

Lessons Learned

Reporting Problems Are Often Data Problems

Many reporting challenges originated from disconnected systems rather than reporting tools.

Existing Technology Is Frequently Underutilized

The organization already owned SQL Server and SAP BusinessObjects.

Unlocking existing investments provided significant value.

Automation Reveals Hidden Issues

When calculations are rebuilt directly from source data, long-standing inconsistencies often become visible.

Trust Matters More Than Technology

The greatest outcome was not automation.

The greatest outcome was enabling people to trust the information again.

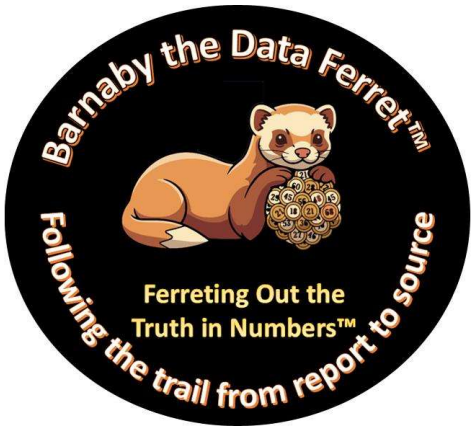
About Jennifer Dalzell & Barnaby the Data Ferret™

For more than 25 years, Jennifer has helped organizations modernize legacy systems, automate reporting, and uncover the truth hidden within operational and financial data.

Barnaby the Data Ferret™ serves as the guide throughout Jennifer's consulting, training materials, and workshops, embodying the persistence and curiosity required to follow the trail from report to source.

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