STS National Database™
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Augmented Abstraction

What Data Managers Need to Know About Third-Party Abstraction Solutions

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ROADMAP

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WHY THIS MATTERS NOW

The Abstraction Burden Is Real

Every record abstracted by hand is time that competes directly with validation depth, quality improvement work, and patient care coordination. This is the tension augmented abstraction is designed to address.

Manual

Element-by-element chart review remains the norm

Dynamic

Specs evolve each upgrade, and cutting variables isn't a viable fix

Competing

Abstraction time crowds out Quality Improvement

STS GOVERNANCE

How We Got Here

1

Council on Quality and Research

Recommended facilitating expanded use of abstraction solutions by STS Database vendors.

2

Leadership Approval

STS's Leadership approved the recommendation with guardrails intended to preserve the integrity and accuracy of the National Database.

3

Guardrails & Resources Developed

Guardrails and vendor resources were developed to responsibly expand augmented abstraction.

Where things stand today: current vendor limitations only permit a limited number of variables to be automatically abstracted — this framework is designed to responsibly expand that over time.

DEFINITIONS

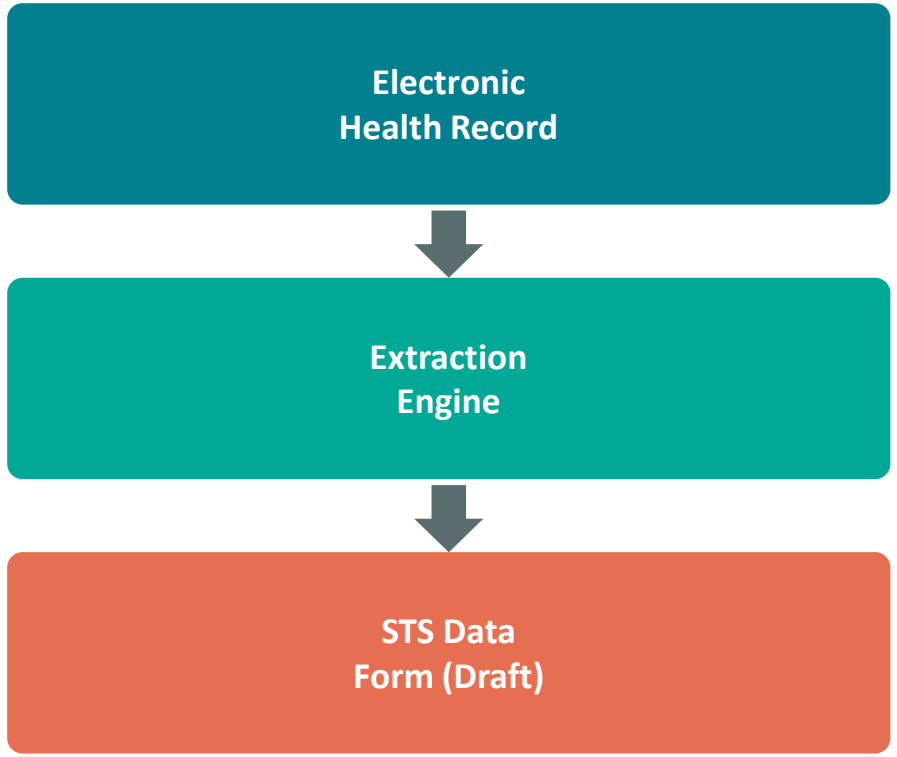
What Is Augmented Abstraction?

A Working Definition

Technology that extracts both structured and unstructured data elements directly from the electronic health record—whether through structured EHR mapping, algorithms, AI, or LLMs—and pre-populates STS data collection forms for data manager review.

The essential point:

It is an assistive tool that accelerates data capture. It is not an autonomous system, and it does not remove the data manager from the process.



DEFINITIONS

Fully Automated vs. Augmented Abstraction

FULLY AUTOMATED (NOT THE STS MODEL)	AUGMENTED (THE STS MODEL)
Human role: Technology extracts and submits data with no person in the loop.	**Human role:** Technology pre-populates the form; the data manager reviews, corrects, and resolves exceptions.
Before submission: Records could move to the warehouse without anyone validating them.	**Before submission:** Human-in-the-loop review of every case before anything is final.
Accountability: Accuracy would rest on the tool alone — not an approach STS supports.	**Accountability:** Data quality stays with you and your HCO, regardless of which vendor solution is used.

PROCESS

How It Works: Four Steps

1

EHR Data Capture

Source clinical documentation is identified within the patient record.

2

Extraction & Mapping

Technology maps documented findings to STS data element definitions.

3

Data Manager Review

You validate, correct, and resolve exceptions before anything is final.

4

Submission

Verified records flow into the STS National Database as usual.

Step 3 is the constant across every implementation: nothing reaches the database without data manager review.

SETTING THE RECORD STRAIGHT

What Augmented Abstraction Is Not—Myth vs. Reality

MYTH	REALITY
“It replaces the data manager.”	Your role shifts toward review, exception-handling, and judgment — it doesn't disappear.
“It's fully autonomous.”	Every case requires human validation before submission.
“Any vendor can plug in.”	Only vendors certified on STS data specifications may submit data. Vendor certification isn't an accuracy guarantee of the vendor's augmented abstraction tool.

YOUR ROLE

Your Role Shifts — It Doesn't Disappear

TODAY: FULL MANUAL ABSTRACTION

- Locate source documentation for every element
- Manually enter each data field
- Cross-check definitions case by case
- Limited time left for QI review

WITH AUGMENTED ABSTRACTION

- Review and validate pre-populated data
- Resolve flagged exceptions and edge cases
- Apply clinical judgment where it matters most
- More time for QI engagement and analytics

Data quality accountability stays exactly where it is today: with you and your organization.

POLICY

STS's Position on Certified Software Vendors

1. STS supports vendor innovation — structured EHR mapping, algorithms, AI, or LLMs — while ensuring every solution is subject to appropriate STS guardrails.

2. STS certifies vendors on compliance with STS data specifications only — not on the vendor's ability to abstract data accurately from the medical record.

3. The STS Database participant (site) remains contractually responsible for the accuracy of data sent to the STS warehouse — regardless of which vendor solution is used.

4. Adoption is voluntary, and STS requires a vendor solution that includes human-in-the-loop (HITL) review and strongly recommends solutions with inter-rater reliability (IRR) functionality.

VENDOR OVERSIGHT

What STS Requires of Vendors

No vendor may offer an AA tool for STS NDB submission until every step below is complete.

1. Be recognized first as an STS-Certified Vendor.
2. Notify STS that they have an AA tool and wish to offer it to sites.
3. Inform STS which sites are using the AA tool (tracked in STS's association management system).
4. Identify AA-abstracted cases by appending “A” to the vendor-generated STS record/operation ID.
5. Accept that the site remains contractually responsible for data accuracy — the vendor's role doesn't change that.
6. Limit AA on risk-model endpoints to cases with clear, undisputable documentation (see below).

The documentation standard, in practice: stroke may be abstracted as “Yes” only when documentation undisputably confirms it occurred. Any “No,” or any disputable documentation, requires manual abstraction.

BEYOND CERTIFICATION

STS-Level Safeguards

STS's Quality and Research and Analytic Center teams built additional safeguards specifically for AA-enabled data submissions.

✓

Near-Real-Time Frequency Report

A new IQVIA-platform report will compare variable submission frequencies between the selected timeframes to flag unusual shifts early. Available in early 2027.

✓

Enhanced Annual Audit

At least one AA participant per vendor is included every year, with STS considering more audited variables and sites.

✓

Ongoing Monitoring & Engagement

STS monitors submission trends internally and engages sites directly when discrepancies arise.

STS also issues ongoing functionality recommendations and guidance to vendors for AA implementations — more on that next.

STS GUIDANCE

What STS Strongly Recommends

- ✓ Human-in-the-Loop Review — a person reviews and validates data before it reaches the STS warehouse, not a fully automated pipeline.
- ✓ ≥97% Pre-Launch Match Rate — before go-live, vendors compare one year of manual vs. augmented abstraction and target at least a 97% match.
- ✓ IRR: Cohen's Kappa >0.95 on risk model variables and endpoints — sites manually re-abstract a sample of AA cases and compare results, targeting a kappa above 0.95 for risk model variables and endpoints. Cohen's Kappa >0.80 for other variables.
- ✓ Trend & Outlier Detection — software flags abrupt changes or outliers between AA and manually abstracted data for review.
- ✓ Source Documentation Traceability — software points reviewers to the specific source documentation used to code each field, not just the coded value. STS also suggests that vendor solutions provide the confidence values to sites (how confident the tool is in the value that it populated)

These are STS guidance for vendors to consider offering — ask your vendor if their platform supports these recommendations.

COMMON PITFALLS

What to Watch For

Over-Reliance on Review

When HITL review becomes a rubber stamp, it defeats the purpose. Every case still deserves real scrutiny.

Documentation Drift

A 97% match rate at launch isn't permanent. EHR templates and documentation habits change — monitor continuously.

Scope Creep on Risk Endpoints

Resist loosening the “undisputable documentation” bar for risk-model endpoints as AA becomes routine.

Certification ≠ Accuracy

STS certification confirms data-spec compliance, not abstraction accuracy. Don't let the badge create false confidence.

VENDOR SELECTION

How to Choose the Right AA Tool

- ✓ Confirm current STS certification status
- ✓ Ask for the accuracy track record: pre-launch match rate (target ≥97%) and ongoing IRR data (Cohen's kappa >0.95 for risk model variables and endpoints).
- ✓ Confirm a real human-in-the-loop workflow exists — and that it shows the source documentation behind each coded field, not just the value.
- ✓ Ask whether the software automatically flags trends or outliers between AA and manual data.
- ✓ Test compatibility with your specific EHR and existing data management workflow.
- ✓ Talk to peer STS sites already using the vendor and ask what training and support they actually received.

Bring this list to your vendor conversations — STS's recommended suggestions are the floor, not the ceiling.

ACCOUNTABILITY

Roles & Responsibilities

VENDOR	DATA MANAGER	Organization
• Certified by STS on data-specification compliance	• Reviews and validates pre-populated data (HITL)	• Oversees site-level data quality
• Notifies STS of its AA tool & AA-enabled sites	• Resolves exceptions and ambiguous elements	• Confirms vendor includes HITL and IRR functionality
• Tags AA cases with “A” on the record ID	• Owns accuracy of every submitted record	• Ensures compliance with STS requirements

THE UPSIDE

What This Can Mean for Your Site

1

Reclaimed Time

for QI initiatives and deeper validation work

2

Faster Turnaround

from documentation to submitted record

3

Less Repetition

in routine, low-judgment manual entry

4

Higher-Value Work

capacity to engage in analytics and outcomes review

LET'S BE DIRECT

Your Questions, Answered Honestly

"Will this replace my job?"

No. Your role shifts toward review, exception-handling, and judgment — the work that actually requires a trained data manager.

"Can I trust the accuracy?"

That's on your site — STS certifies data specs, not accuracy of augmented abstraction. Look for ≥97% match rate at launch and IRR with kappa >0.95 on risk model variables and endpoints.

"What does this cost my site?"

Cost varies by vendor. STS is not involved with the pricing.

"How steep is the learning curve?"

Certified vendors will provide training and support resources as sites onboard. Reach out to other sites using the software you're considering and ask questions.

COMMUNITY FEEDBACK

What We're Hearing From You

Our recent STS data manager survey included new questions on augmented abstraction awareness and interest. Early feedback shows strong curiosity paired with real questions about accuracy and workflow fit — exactly what today's session are designed to address.

Interest is high

Accuracy is the top question

Workflow fit matters most

Training is requested early

TAKE ACTION

Getting Started at Your Site

1	**Talk to Your Surgeons and Admins**	Raise interest in augmented abstraction and gauge site-level readiness.
2	**Review Certified Vendors**	Consult the STS-certified vendor listing once your site is ready to evaluate.
3	**Ask for the Numbers**	Ask each vendor for their pre-launch match rate and Cohen's kappa — don't just take “we're accurate” at face value. These values should be site specific.
4	**Assess Workflow Fit**	Evaluate compatibility with your EHR and current data management workflow.
5	**Confirm Your Go-Live Date**	Confirm your vendor's timeline for your site.

Thank You – Open Discussion

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