



Building a More Resilient Registry Abstraction Model

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Agenda

- Abstraction Capacity Pressures
- Your Current Model
- A More Efficient Approach
- When Support Makes Sense
- Support in Practice
- Q&A and Next Steps



Poll #1

Where does your team experience the biggest bottleneck?

A

Finding and identifying eligible cases

B

Reviewing charts and abstracting data

C

Obtaining missing information or completing follow-up

D

Validating data and completing submissions

Abstraction Capacity Pressures

Knowing there's a problem isn't enough.



Registry Teams



PROBLEM

Workloads can outpace available capacity



BARRIER

Changing volumes, staffing gaps, and complex requirements



IMPACT

Timeliness and consistency become harder to maintain



Clinical Leaders



PROBLEM

Trusted registry data is not always available when needed



BARRIER

Skilled teams must prioritize data collection over validation



IMPACT

Less time to identify and act on improvement opportunities



Health Systems



PROBLEM

Continuity depends on consistent specialized resources



BARRIER

Experienced abstractors are difficult to retain and replace



IMPACT

Staffing changes can increase submission or reporting pressure

Your Current Model

Where is your current model under pressure?

Fragmented workflows

Registry entry, validation, reporting, and performance review happen in too many places.

Manual burden

Abstractors spend time chasing data, correcting issues, and preparing files.

Limited visibility

Leaders can meet submission requirements but still struggle to see trends, variation, and opportunities.



Poll #2

How would you describe your team's current abstraction timing?

A

As soon as cases enter the queue

B

On schedule throughout the reporting period

C

Primarily right before submission deadlines

D

Behind schedule or managing a backlog

A More Efficient Approach

More than extra hands: one connected team around the workflow



EXPERIENCED REGISTRY PROFESSIONALS

Cross-trained expertise across cardiovascular, oncology, stroke, surgical, and CMS/TJC programs.



REGISTRY TECHNOLOGY EXPERTISE

Deep knowledge of the tools clients already use, including available automation and validated workflow efficiencies.



SERVICE LEADERSHIP AND GOVERNANCE

Oversight, workflow coordination, regulatory support, quality management, and performance measurement.

WHERE IT'S DIFFERENT

How That Approach Comes to Life

EFFICIENCY	WHAT WE DO	WHAT YOU GAIN	BY THE NUMBERS
Case Identification	Use code sets and logic to flag eligible cases	More complete capture with less manual work	• 90% automated • 6,000 hours saved/year
Data Mining	Pull discrete EMR data using registry-specific logic, validated by abstractors	Less chart review; more focus on judgment	• Partially automated • 38,000 hours saved/year
Data Entry	Import extracted values directly into registry tools	Less manual entry and fewer errors	• Fully automated values • 13,000 hours saved/year
Reporting Insights	Reduce abstraction time per case	More capacity for judgment and improvement opportunities	• 220 measurable improvements • \$4.9M in labor savings

Proven scale, quality, and efficiency

Real results across abstraction capacity, data quality, submission performance, and efficiency.

These gains compound. We refine case finding and data collection as registry specs change, so review time keeps dropping year over year.

SUCCESSFUL SUBMISSIONS

100%

DATA QUALITY

98%

TOTAL HOURS SAVED

240K+

SUPPORTED REGISTRIES

72

EFFICIENCY PROJECTS

223

CHARTS REVIEWED ANNUALLY

250K+

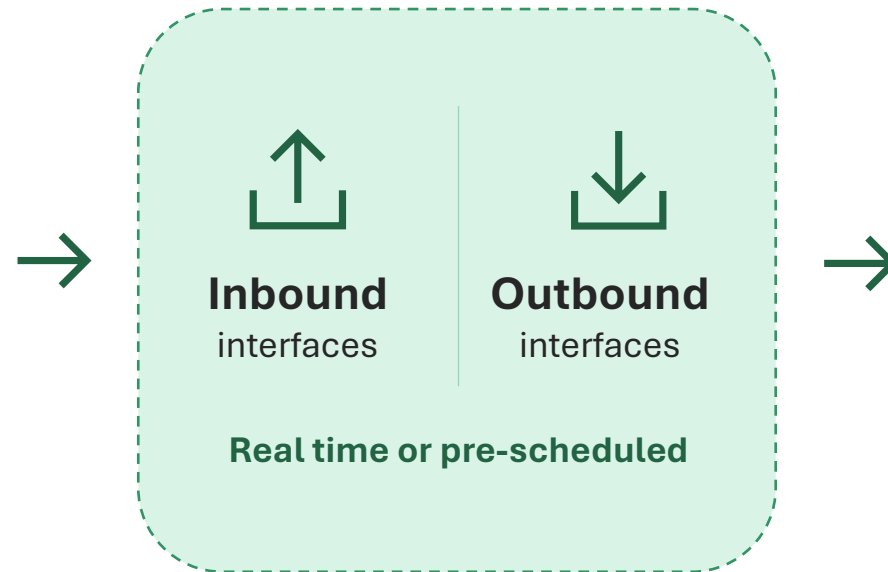
Automated Data Integrations

Move data into and out of the registry without manual work.

DATA SOURCES

-  EMR
-  Pathology
-  Medical oncology
-  NLP for pathology
-  Tumor boards

AUTOMATED FLOW



REGISTRY



Secure exchange methods

HL7

API

SFTP

15-20%

| efficiency gains from automated processes

Automation Technologies

Combine structured data importers with AI-assisted abstraction.

DATA SOURCES



Discrete data

*Clinical Importers (EMR Data)
or ADT / Hemo Interfaces*



Non-discrete data

*Patient's EMR Note data
(H&P, Op Notes, etc.)*



AUTOMATED FLOW



Clinical Importers

Auto populate
discrete fields

*10-65%
efficiency gain*



Abstraction AI

Suggests answers
from patient notes

*30%+ efficiency
gain*



REGISTRY



Less manual abstraction

40%+

Reduction in abstraction time when the tools work together

Maximizing the Value of Your Registry Participation

ANNUAL REGISTRY INVESTMENT

\$191K

\$23K participation + \$168K abstraction

ANNUAL IMPROVEMENT SAVINGS

\$368K

Initiative for reducing post-PCI bleeding events

NET ANNUAL SAVINGS

\$177K

\$368K savings – \$191K investment

A Health Catalyst Case Study

Data-Informed Improvements Decrease Post-PCI Bleeding Events

Bleeding complications occur in up to 16 percent of all patients undergoing percutaneous coronary intervention (PCI). Community Health Network (CHNw) identified one area where it didn't perform as well as expected for post-PCI bleeding and found ways to improve through risk-adjusted quality metrics, interdisciplinary teams, analytics, and smartsourced clinical chart abstractors. CHNw's data-informed improvement efforts are delivering the desired results.



Challenges & Impact

- CHNw determined that it wasn't performing as well as expected with the risk of bleeding around the time of coronary intervention.
- **Impact:** Aware that bleeding events increased morbidity, mortality, length of stay (LOS), and cost, CHNw prioritized bleeding events for improvement.

Solution

- Leveraged the Health Catalyst® Data Operating System (DOS™) platform and its smartsourced clinical chart abstractors to understand its data and associated improvement opportunities.
- Interdisciplinary team reviewed a year's worth of bleeding event data, conducting deep dives into the data and identifying gaps—clarifying the patient population, defining and standardizing the documentation process, and implementing standard order sets.

Results

- **42.3% relative increase** in the number of PCIs performed using a radial approach.
- **\$368K in annual cost savings**, the result of a **40.8% relative reduction** in the number of patients with post-PCI bleeding events within 72 hours of the procedure and a **5.3% reduction in LOS**.

Maximizing the Value of Your Registry Participation

MBSAQIP REGISTRY COST

\$63K

\$23K registry participation + \$40K abstraction costs

DOCUMENTED COST SAVINGS

\$434K

Reduced post=surgical pain medication and LOS

SAVINGS AFTER REGISTRY COSTS

\$371K

\$434K savings – \$63K investment



Evidence-Based Protocols and Analytics Save \$295K

Inpatient hospital stays are estimated to cost the healthcare industry more than \$378B annually. Longer length of stay (LOS) has contributed greatly to these rising healthcare costs, and in today's value-based care environment, the pressure is on to understand how to best provide efficient care while also providing quality care. Evidence-based care is an important contributor to decreasing LOS.



\$

\$295K direct cost savings, the result of a 15.7% relative decrease in inpatient average LOS for bariatric surgery patients.



104 more days at home for bariatric surgery patients.

Analytics-Driven Opioid-Reduction Strategies Save \$138K

Excessive opioid prescribing creates risk for abuse and adverse effects but must be balanced against individualized pain control. Opioids are overprescribed following most common surgical procedures, including bariatric surgeries. Studies show that opioid prescriptions are highly variable and excessive for most patients, leading to poor health outcomes.



\$

Community Health Network (CHNw) needed a solution that equipped its providers with the real-time insights needed to implement and manage a new multi-modal pain control protocol for its bariatric surgery patient population. Using its powerful data platform and analytics applications, along with its Metabolic and Bariatric Surgery Quality Improvement Program (MBSAQIP) Data Registry, it was able to generate the necessary real-time data and insights for its providers to successfully minimize opioid use in this patient cohort while still effectively addressing postoperative pain through opioid-reducing, multi-modal strategies. CHNw improved patient outcomes in less than one year.

\$138.5K cost savings, the result of a 15.5% increase in the rate of patients receiving zero milligram morphine equivalent (MME) following bariatric surgery.

||.

59.4% relative reduction in average inpatient MME following bariatric surgery.

Poll #3

How does your organization primarily use its registry data?

- A** To meet reporting and submission requirements
- B** To monitor performance and compare against benchmarks
- C** To guide quality improvement initiatives
- D** To support a balanced mix of reporting, benchmarking, and improvement

What becomes possible

- ✓ Stay current with supported society requirements
- ✓ Reduce duplicate data entry and manual reporting
- ✓ Validate data before submission risk becomes urgent
- ✓ Trend performance across current and historical registry versions
- ✓ Drill down by system, facility, physician, procedure, and patient
- ✓ Give abstractors, quality leaders, physicians, and administrators access to trusted registry data



When Support Makes Sense

A registry operation build to grow with you

- ✓ Maintain consistent capacity across registries, facilities, and case volumes
- ✓ Protect data quality and submission readiness as demands change
- ✓ Scale support as new registries, facilities, or requirements are added
- ✓ Apply consistent workflows, validation, and quality processes
- ✓ Reduce manual effort through available imports, automation, and registry tools
- ✓ Operate with an experienced team that functions as an extension of yours



Registries List—ARMUS and CRStar

NATIONAL SOCIETY REGISTRIES

- AHA GWTG-CAD
- AHA GWTG-Heart Failure
- AHA GWTG-Stroke (coming soon)
- AHA GWTG-Cardiogenic Shock ^
- ACC-NCDR AFIB
- ACC-NCDR CathPCI **^+
- ACC-NCDR Chest Pain MI ^+
- ACC-NCDR EP Device Implant ^
- ACC-NCDR IMPACT
- ACC-NCDR LAAO ^+
- ACC/STS TVT **^+
- STS Adult Cardiac Surgery **^+
- STS Congenital Heart Surgery ^
- STS General Thoracic Surgery *^

STATE INITIATIVE REGISTRIES

- *NY State PCIRS (PCI) ^*
- *NY State CSRS (Adult Cardiac Surgery) ^*
- *NY State SHIRS (Structural Heart - TVT) ^*
- *CA State CCORP (Adult Cardiac Surgery)*
- *GA State CV Disease Program (Export only)*
- *MA State Adult Cardiac Surgery (Export only)*

INTERNATIONAL REGISTRIES

- ACC Global Quality Initiative CathPCI
- ACC Global Quality Initiative CPMI

QUALITY COLLABORATIVE REGISTRIES

- PERForm (MSTCVS) ^
- OB COAP and CBDR Midwives (FHCQ) ^
- SCOAP (Surgical/Spine) (FHCQ) ^

SOCIETY TECH PARTNERSHIPS

Sub-Specialty Society Registries

- ImageGuide Transthoracic Esophageal Echo ^
- ImageGuide Stress Echo ^
- ImageGuide Pediatrics Registry ^
- ACC-NCDR AFIB

STANDARD SETTERS

- North American Association of Central Cancer Registries (NAACCR)
- Surveillance, Epidemiology, and End Results (SEER)
- Pediatric Data Collection System (PDCS)
- American Joint Committee on Cancer (AJCC)
- American College of Surgeons Commission on Cancer (CoC)

Options: *AI Abstraction (now/near future); ^Importers/Interfaces; +IRR Tools (now/near future)

Poll #4

Which best describes your current abstraction staffing model?

A

Dedicated internal abstractors

B

Internal staff who balance abstraction with other responsibilities

C

External contractors or an outsourced abstraction team

D

A combination of internal staff and external support

Support in Practice

Our Abstraction Services Approach

Where technology, expertise, and optimized workflows meet



Our Team

- **Credentialed registry experts** supported by program leaders, data engineers, support technicians, and abstraction improvement specialists
- **Cross-coverage capacity** that protects continuity during volume changes, absences, and turnover
- **Scalable team structure** that is difficult and costly to replicate in-house



Our Approach

- **Prioritize the highest-value** efficiency projects
- **Start with a proven set of data** elements to accelerate development and reduce rework
- **Pair data engineers and abstractors** to align technical builds with clinical workflows
- **Work in sprints to deliver value** faster and continuously expand automation



Our Results

- **2,000+** data elements extracted across registries
- **98%** average accuracy
- **Human validation** for values below 95% accuracy
- **63,000+** manual abstraction hours saved annually
- **Up to 50%** reduction in abstraction time per case
- Automated case finding for all clients

CathPCI extract accuracy

Extracted data
elements for the ACC
CathPCI registry, with
per-element accuracy
and source guidance.

Registry	NI	DataElementNM	Accuracy Test	How To Use		
CV		Total	100%	Accept Value		
Cath PCI		ACE Inhibitors - Discharge	92%	Look Elsewhere when 'N' (Location: H&P, ED Notes, Op Notes, Discharge Summary)		
		ACE Inhibitors - Pre Procedure	97%	Look Elsewhere when 'N' or Empty (Location: H&P, ED Notes, Op Notes)		
		Admitting Provider	100%	Accept Value		
		Admitting Provider Name	74%	Reference		
		Admitting Provider NPI	74%	Reference		
		Alirocumab - Discharge	100%	Look Elsewhere when 'N' (Location: H&P, ED Notes, Op Notes, Discharge Summary)		
		Angiotensin II Receptor Blocker - Pre Procedure	97%	Look Elsewhere when 'N' or Empty (Location: H&P, ED Notes, Op Notes)		
		Antiarrhythmic Agent Other - Pre Procedure	100%	Look Elsewhere when 'N' or Empty (Location: H&P, ED Notes, Op Notes)		
		Apixaban - Discharge	93%	Look Elsewhere when 'N' (Location: H&P, ED Notes, Op Notes, Discharge Summary)		
		Apixaban - Procedure	99%	Accept Value		
		ARB - Discharge	100%	Look Elsewhere when 'N' (Location: H&P, ED Notes, Op Notes, Discharge Summary)		
		Arrival Date/Time	100%	Accept with condition "â€" If blank, look to usual sources.		
		Arrival Time	100%	Accept Value		
		Aspirin - Discharge	96%	Accept Value		
		Aspirin - Pre Procedure	92%	Look Elsewhere when 'N' or Empty (Location: H&P, ED Notes, Op Notes)		
		Beta Blocker - Discharge	95%	Look Elsewhere when 'N' (Location: H&P, ED Notes, Op Notes, Discharge Summary)		
		Beta Blockers - Pre Procedure	99%	Look Elsewhere when 'N' or Empty (Location: H&P, ED Notes, Op Notes)		
		Birth Date	100%	Accept Value		
		Bivalirudin - Procedure	100%	Accept Value		
		Calcium Channel Blockers - Pre Procedure	99%	Look Elsewhere when 'N' or Empty (Location: H&P, ED Notes, Op Notes)		
		Cangrelor - Procedure	100%	Accept Value		
		Cardiac Rehab Referral	99%	Accept with Condition "â€" if not found, check notes or other sources		
		Cerebrovascular	96%	Look Elsewhere when 'N' or Empty (Location: H&P and Op Notes)		
		Cerebrovascular Disease	95% (excluding	Accept with condition "â€" If No Result Found, need to look at usual sources to confirm. If Mayb		
		Chronic Lung Disease	97%	Look Elsewhere when 'N' or Empty (Location: H&P and Op Notes)		
		Clopidogrel - Discharge	100%	Accept Value		
		Clopidogrel - Procedure	100%	Accept Value		
		Creatinine - Discharge	100%	Accept Value		
		Creatinine - Post Procedure	100%	Accept Value		
		Creatinine - Pre Procedure	100%	Look Elsewhere when 'N' or Empty (Location: H&P and Op Notes)		
		Dabigatran - Discharge	100%	Look Elsewhere when 'N' (Location: H&P, ED Notes, Op Notes, Discharge Summary)		
		Dabigatran - Procedure	100%	Accept Value		
		Diabetes	97%	Look Elsewhere when 'N' or Empty (Location: H&P and Op Notes)		
		Diagnostic Coronary Angiography	N/A	Reference		
		Diagnostic Provider	N/A	Accept with condition "â€" If no result displayed, check usual sources.		
		Dialysis	100%	Look Elsewhere when 'N' or Empty (Location: H&P and Op Notes)		
		Discharge Creatinine	99%	Accept with condition "â€" if no result displayed, check usual sources to confirm		

A Support Model Built for a Long-Term Partnership



Single Point of Contact

A dedicated Program Lead owns the client relationship end to end



Defined Escalation Path

Response-time commitments for urgent issues, with clear ownership at each tier



Recurring Governance Cadence

Standing operational check-ins and monthly executive reviews



End-User Driven

Built with inputs from end users and the voice of our clients



Transparent Reporting

Abstraction KPIs shared on a recurring basis, not on request

Questions?