Establishing a Practical and Innovative Collaborative Vendor-Client Data Relationship to Improve Data Integrity

ABSTRACT----------

The University HealthSystem Consortium (UHC) operates the most widely used clinical comparison and benchmarking database among the major academic (teaching) medical centers. One of the UHC Data Services functions performing data quality and validity checks on member data prior to the loading into the Clinical Data Base (CDB) system. Data Services has developed a sophisticated system of data logic checks and submission feedback tools to insure data is submitted according to data specifications and to insure the validity of the data to the maximum extent possible. Use of these feedback mechanisms by members is critical to the success of the data integrity program of the CDB.

Fletcher Allen Health Care, a 620 bed tertiary care academic medical center UHC member associated with the University of Vermont participates in the CDB program. The Fletcher Allen Measurement Group is somewhat unique within the UHC membership centralizing one area for collection, validation, and quality checks prior to data submissions to UHC and a single point resource for resolving identified data issues. Fletcher Allen's Measurement Group adopted a data submission "zero" fault goal to achieve higher reliability and data validity. Fletcher Allen designed a proactive data integrity management approach integrating the expertise and tools supplied by UHC into a comprehensive local intervention system to achieve this goal. The commitment of time, resources, willingness to partner, and management attention to this effort has resulted in data integrity consistently surpassing the majority of the other UHC members.

BIOGRAPHY----------

Allen Juris
Assistant Director, Data Services
University Health Systems Consortium

Allen Juris is Assistant Director for Data Services, Technology Services (TS) at UHC. In this role since June 1990 he is responsible for the automated patient data production system at UHC. He works closely with UHC members and the clinical experts at UHC to ensure the integrity of the data feeds and the application of the risk adjustment models and algorithms of the UHC Clinical Data Products. Mr. Juris assists members in extracting data from their various systems and interpreting their data quality reports. He also maintains the documentation of file specifications and editing algorithms.

Prior to UHC, Mr. Juris was the data management specialist at the Renal Network of Illinois. He was solely responsible for management of a federally mandated patient tracking system of End Stage Renal Disease patients receiving dialysis and/or kidney transplants in the state of Illinois. Duties included monthly reports of patient activity for transmission to the federal government. Additionally, he maintained the patient database that was used for quality assurance of patient care by the organization and participated on the governing council.

Michael Nix
Manager, Clinical & Operations Measurement Group
James M. Jeffords Institute for Quality & Operational Effectiveness

Michael Nix is Manager of the Clinical and Operations Measurement Group of the James M. Jeffords Institute for Quality and Operational Effectiveness at Fletcher Allen Health Care, Burlington Vermont. With an academic background in Industrial Management and Systems Management he has worked for twenty nine years in healthcare including quantitative analysis, quality management, clinical operations analysis, consulting, material management as well as general hospital data collection and distribution. He has also taught a variety of business, management and finance courses at the college level for over 24 years and is currently a part-time Adjunct instructor at Champlain College in Burlington Vermont teaching Financial and Economic Modeling in both their undergraduate and MBA programs.

A Practical & Innovative Collaborative Vendor-Client Relationship to Improve Data Integrity

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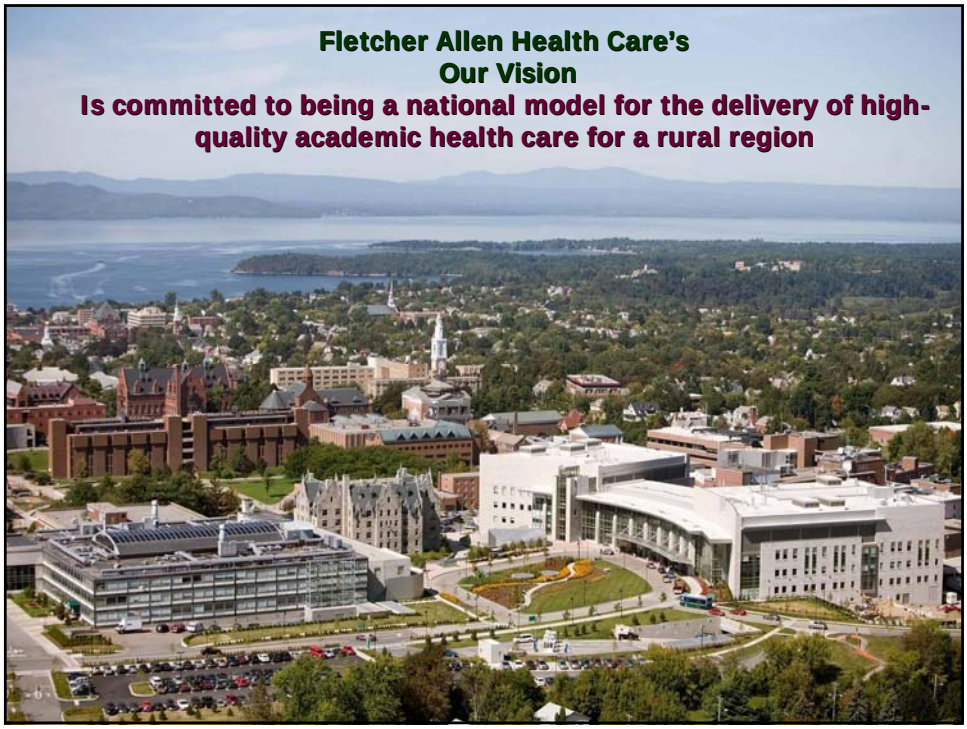
About UHC

The University HealthSystem Consortium is a non-profit, member-owned alliance of academic medical centers *and their networks*. As a membership organization, UHC provides its 103 AMC members, 191 associate member hospitals, and 71 faculty practice plan members with resources aimed at improving performance levels in clinical, operational, and financial areas.



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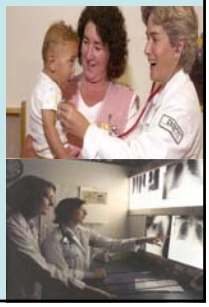
About Fletcher Allen

- Largest Healthcare Facility in Vermont
  - 2nd largest employer in the state
- 562 Licensed Beds
- 45,827 Admissions (Inpatients & Bedded Outpatients)
- 995,965 Physician Encounters
- 52,760 ED Visits – Level 1 Trauma Center, Level 3 NICU
- 6,700 Employees
- 750 Medical Staff: 450 are employed
- 14 Residency Programs
- Tertiary Care Facility for Northern Vermont & New York plus Northwestern New Hampshire



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Choosing The Right Data Collaboration Relationship

Look For Who Has Experience, Expertise And Understanding Of Your Setting

- Fletcher Allen Operates Within A Limited Cohort of Academic Medical Centers
- The Tertiary Care Role Is Challenging (Care of Last Resort)
- Regional Patient Population – Vermont/Northern NY/NH
- Also A Large Community Hospital Serving Chittenden & Grand Isle Counties
- Rural Setting – Significant Distances To Care Alternatives

We Chose the University HealthSystem Consortium As Our Partner Because They Could Contribute To Most Of These Imperatives

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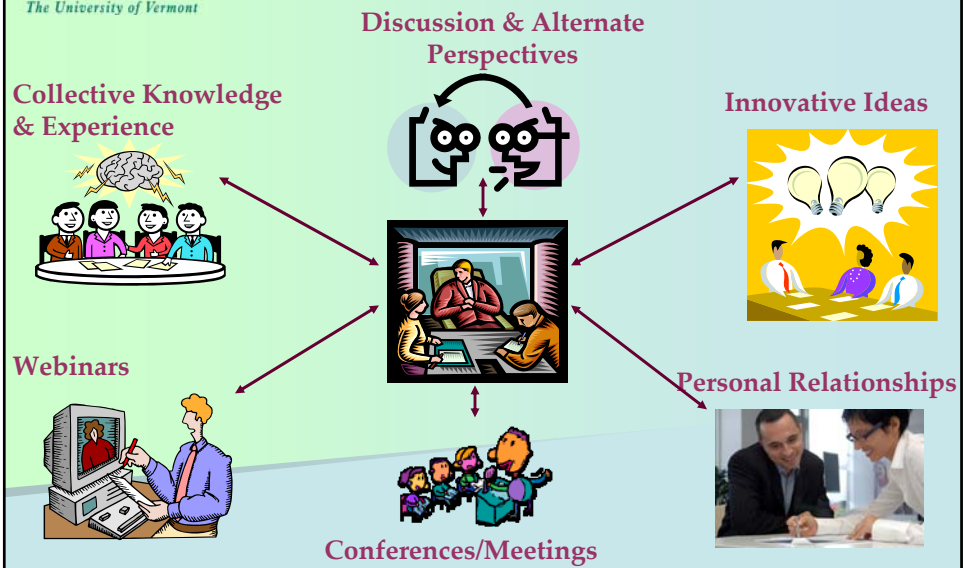
The Value of Collaborative Data Relationships



History of the Clinical Data Base

- Started in 1987
- 27 participating hospitals
- 3480 cart tapes & phone book sized binders
- Move to CD Rom data with local desktop software
- Web based in the early 1990s
- Now handling over 1.5 million inpatient discharges and over 8 million non-inpatient visits per year for 160+ AHCs and their affiliates

Unique Features of UHC's Clinical Data Base/Resource Manager

- **Transparency**
  - Participants have the ability to see other participants' data by name
  - Participants can see and react to the models
  - Participants can get as involved as they want in creating the future direction of these databases
- **Expert Analytics**
  - UHC focuses on major teaching hospitals and their affiliates
  - We are researchers, statisticians, administrators (extension of your staff)
- **Training and Support**
  - There is no extra cost for training, analysis support, and research support

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Comparative Data, Analytics and Management Tools

- **Performance Accelerator Suite**

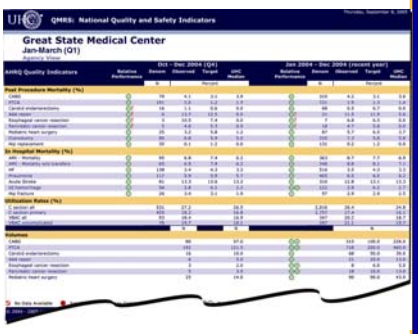
  Comparative data bases, custom "at glance" management reports, and premium executive analytic services that identify areas of greatest opportunity

  Clinical

  Clinical Resource Management

  Operational

  Financial



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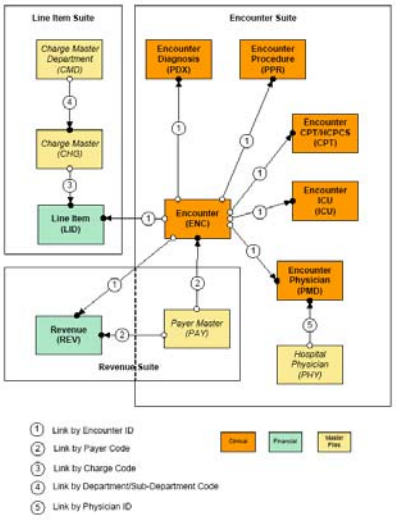
Requirements -Consolidated Patient Data Feed



- Monthly submission of a "rolling quarter"
- Unlimited number of diagnoses/procedures
- POA
- Physician capture
  - Discharging
  - Procedural
  - Other
- Detailed ICU data

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Individual file requirements

Encounter File example:

UHCHEADER|01|test|20050101|20050331|ENC|05|20070122
F03004576215|F000177663|408388907|408388907A|19270806|1|01|44039|1|7|20041221|15|20050101|14|01|12466|32|197||Y||3|1|9|54997.29||0|5||
F03004580746|F000311286|269284046|269284046A|19150101|2|01|44124|2|1|20041222|10|20050101|11|06|123098|39|462|S|N||||3|7|9716.97||1|5||
F03004588632|F000167673|282461750||19471113|2|01|44138|1|7|20041226|15|20050101|14|01|660987|10|188||Y|||8|9|18068.42||0|1||
F03004593020|F000156454|286070501|286070501A|19160401|2|01|44054|1|7|20041227|18|20050101|20|51|666897|39|82||Y||1|9|9|12091.09||0|||
F03004594606|F000433839|271469197||19501208|2|01|44102|2|1|20041227|21|20050101|17|01|777243|25|24||N|||1|9|12499.66||0|5||
F03004594663|F000395889|386269173|386269173A|19221123|1|01|44070|1|7|20041228|03|20050101|15|01|77777|10|182||Y|||1|9|13052.22||0|3||
F03004599753|F000386748|284308849|284308849A|19330926|2|01|44145|1|7|20041229|14|20050101|16|04|99876|39|188||Y|||3|7|10050.54||0|5||
UHCTRAILER|01|test|20050101|20050331|ENC|05|14

Payer File example:

UHCHEADER|01|test|20050101|20050331|PAY|05|20070122
1|BLUE CROSS - INDEMNITY|01|01||
3|GREAT STATE HEALH PLAN HMO|02|01||
5|MEDICARE|02|01||
6|MEDICAID|02|01||
7|GOVERNMENT PROGRAMS|02|10||
8|WORKERS COMPENSATION|02|10||
9|SELF PAY|12|15||
10|SELF PAY|13|15||
11|SELF PAY|13|14||
UHCTRAILER|01|test|20050101|20050331|PAY|05|9

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Challenges & Imperatives Of Data Quality Commitment

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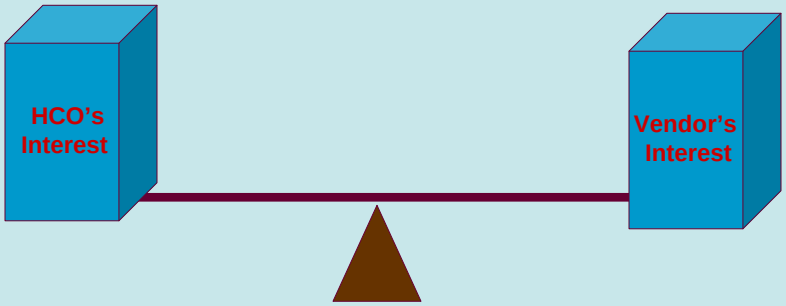
Building A Reliable Collaborative Data Relationship - A Balancing Exercise

Cost Effective & Achievable
Understanding of Vendor Processes
Clear Specifications
High Data Credibility

Multiple Member Needs
Involved Members
Need for Consistency
Data Quality Rigor



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Imperatives for Data Collaboration & Comparison

Why Is This Important In Healthcare? Why An Increased Focus On Credibility & Reliability In Healthcare Data?

We all fundamentally understand the need for solid and reliable data so this perspective is not new, what we want to address is the healthcare environment perspective

Avoiding GIGO ??? ???

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Motivations For Improved Data

At Its Basic Level - Healthcare Decisions Involve Lives & Wellbeing of People

- Data Must Be Representative Of Reality
- Data Has To Be Actionable With High Confidence For Users
- Wide Margins & Allowances For Error Result In Bad Decisions
- Waste of Valuable Resources If Not Valid & Credible
- Time Sensitive Process Improvement Opportunities Lost

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Imperatives
Benchmark Comparisons

Benchmarking – Helps you recognize that somewhere, somehow you are not as efficient or as capable of achieving desired results as others doing similar work

- Insuring a common definitional basis is critical


=

Or


- Validation of common classification, coding schemes & data structures is essential across participants

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The Practical Case For Collaboration & Comparison

Healthcare Data is Complex - Perspective Needed

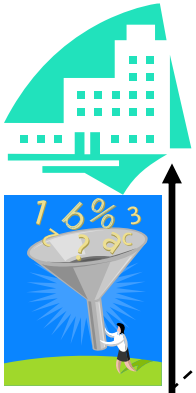
Broad Range of Severity Levels to Consider

Risk Adjustment Methodologies Are Complex & Time Consuming to Develop

Modeling Clinical Outcomes Are Dependent on Expertise Not Normally Found Locally

Healthcare Still Functions Largely As An Artisan Industry Seeking Standards & Uniformity

Data Quality Reports



CPDF tx to UHC

Is it 'clean'?
Does it meet the specs?
Are there major errors?

PASS (comparable)
OR
FAIL & RETURN

Data Quality Info on Each Submission

- Summary on exceptions
- Description of items exceeding tolerance limits
- Statistics and Frequencies
- Z Scores
- Severity and cost information
- DRG/MSDRG differences
- Bottom and Top 50 cases in charges (excluding 0)
- Extremes (Cases >$500,000 in charges / LOS>300days)
- Detailed listing of exceptions
- Charge Detail

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Challenges to Data Quality

- I don't know what I don't know
  - Data may pass UHC edits - doesn't necessarily mean it is true or valid
  - More than technical staff must be involved in the cleansing and quality assurance tasks
- Fluid environment
  - New, evolving or changing care circumstances
  - Changes in coding/reporting requirements
  - New/updated hospital source systems, e.g. EPIC, McKesson, etc

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Managing Change

- Regulatory imperatives
  - Present on Admission Indicators
    - ✓ New coding requirements requires UHC to be knowledgeable and nimble enough to adjust to the needs of the database participants
  - ICD10CM replaces long standing ICD9CM
    - ✓ Coding system for diagnosing and treating patient illness soon to change dramatically
    - ✓ UHC will likely maintain an overlap to avoid a break in trending over time just as we did with the DRG/MSDRG

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What Is An Acceptable Data Quality Score?

100% ?

Absolutely!!

However – 100% Doesn't Happen On Its Own

It Takes An Explicit Commitment To An Ambitious End Result To Achieve This Goal.

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Imperatives
Clinical Outcomes

- Risk Adjustment Methodologies Are Dependent on Data Accuracy and Consistency to Generate Valid Comparison to Similar Institutions

Are our patients comparable (or not)?

?????????

- Conclusions Reached About Best Practices Must Be Based on Uniform Criteria – i.e. Coded/Risk Adjusted Consistently
- Conclusions Must Be Rigorously Defendable!!

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Operational Integration

Integrating Highly Credible Benchmark Data Into Operational Reporting Allows For Objective Evaluations

- Length of Stay
- Mortality/Early Deaths
- Intensive Care Use
- Clinical Resource Consumption
- Readmission Rates
- Complication Rates
- Costs

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Reliability Factors Impacting Data Quality

- Healthcare data systems are inherently dynamic & changing
  - –Academic medical centers operate 20-50 "product lines"
  - –Delivery of care is highly individualized
- Services provided are changing constantly
- Coding & classification systems update routinely
- Billing & payer rule changes significantly impact data sources
- Hard to maintain personnel continuity in many areas

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Our Process – Key Elements

- Single Data Coordinator – Outcomes, Not IT Focused
- Designated Data Owner in Each Data Situation
- Locally Programmed UHC Data Quality Checks - Verify Data Prior To Submission
- Data Quality/Exception Reports Are Worked By The Data Coordinator For Continuity
- Emphasis on Consistency Through Automation

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Our Process – Key Elements (cont)

- Identify Data Experts In Each Source Area
- Maintain Consistent Communication With Data Experts & Owners
- Data Coordinator Centrally Catalogs Data Translations & Mapping
- Operationally Linking Upload to Data Quality Feedback Is Absolutely Critical!!
- Above All Else - Common Sense Applied to KISS Principal

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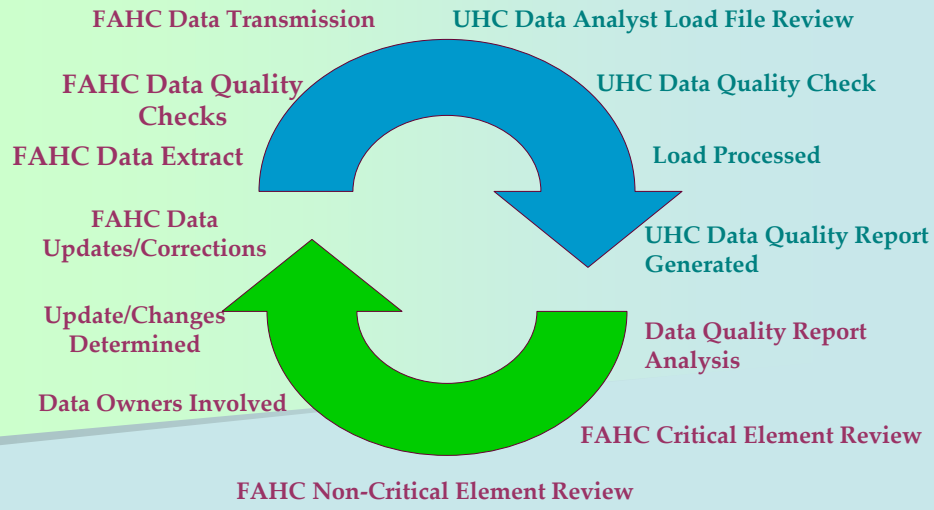
Basic Process Flow – Monthly Iterative Components



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Building a Collaboration – Getting Into The Vendor's Head

- Understand what the vendor is looking for in the data submission – not just "file specs"
- Link output reports and capabilities back to the data elements involved – understanding how data is used
- Understanding timing and processing issues
- Work with the vendor analysts and data handlers on every question that crops up
  - Ask questions !!!

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Lessons Learned

- Ongoing Collaboration Is Critical
- Understanding Each Other's Perspectives Is An Ongoing Challenge
- Generating High Quality Data Requires Resources & Commitment To Excellence

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Lessons Learned (Cont)

- Tools & Techniques Have To Be Systematically Applied
- This Isn't A "Set It & Forget It" Situation
- Change Is The Only Constant – Learn To Manage To That Reality

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