Community Health Access Network (CHAN)

Data Warehouse Project

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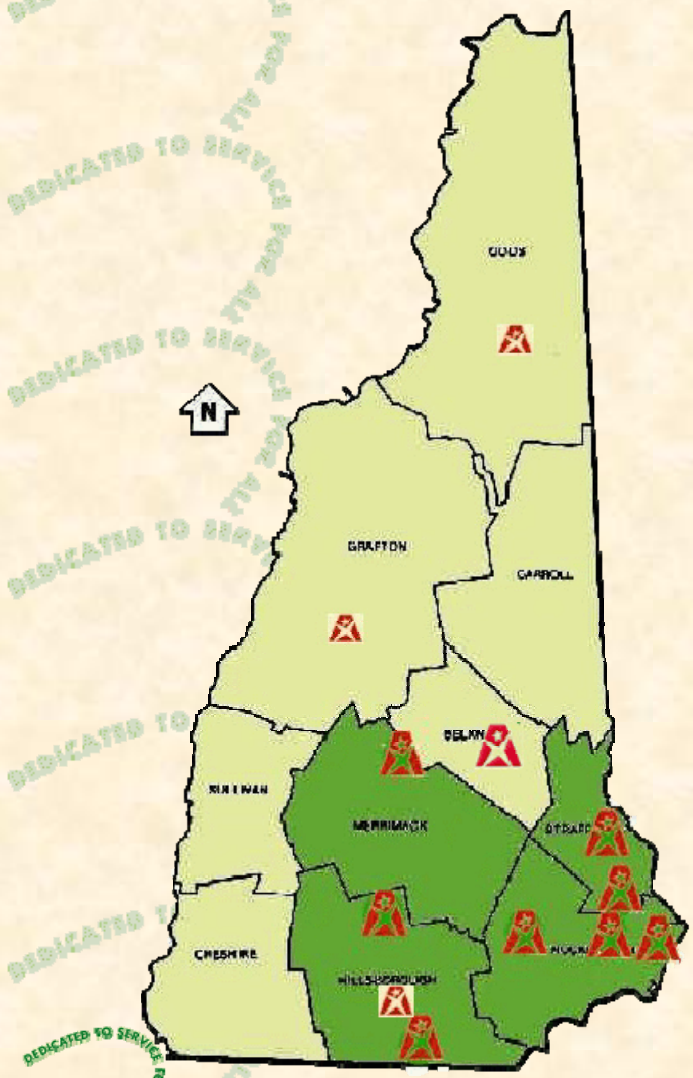
Who we are and what we do

- **CHAN** is a Health Center Controlled Network of Community Health Centers (CHC)
- CHCs provide multiple services including primary care, dental care, counseling services, women's health, health promotion and education, and case management – regardless of patient's ability to pay
- Each Full member agency has a seat on **CHAN's** Board of Directors
- Currently, 45% of funding comes from member dues and system fees, the balance from various federal, State and foundation sources

CHAN's HCCN Members



6 Full NH members – Federally Qualified Health Centers:
- -Avis Goodwin CHC (Dover, Rochester)
- -Families First Health and Support Center (Portsmouth plus Healthcare for the Homeless Program van)
- -Health First Family Care Center (Franklin, Laconia)
- -Lamprey Health Care, Inc. (Raymond, Newmarket, Nashua)
- -Manchester CHC (Manchester)

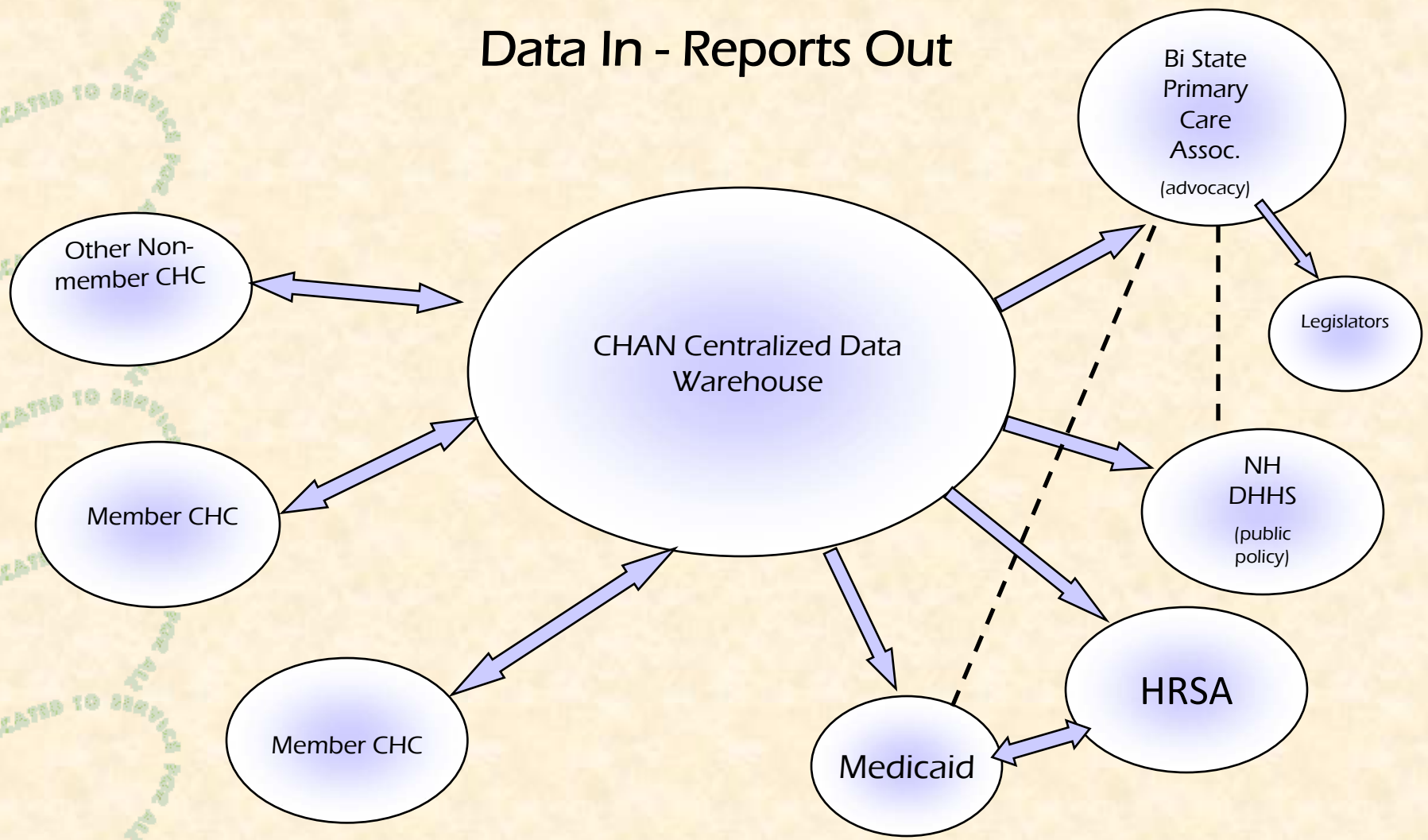
1 Full Federally Qualified Health Center member in Texas:
- -Shackelford County Community Resource Center – 4 sites

4 Affiliate FQHC members
- -Coos County Family Health Services (Berlin, Gorham)
- -Ammonoosuc Community Health Services, Inc. (Littleton, Woodsville, Whitefield, Franconia, Warren)
- -Healthcare for the Homeless Program (Manchester)
- -Harbor Care Clinic, Healthcare for the Homeless Program (Nashua)

How we got here

- Using grant funding, CHAN began implementing Electronic Medical Records in 2000
- Much customization of data input screens was done to accommodate various programs
- Screens are designed to collect discrete data elements to enable us to show our funders how we make a difference for our patients
- EVERYONE who supports us wants a REPORT!!!

Data In - Reports Out



goal: to identify, collect and combine STANDARDIZED data from multiple systems

goal: utilize this standardized data to guide Public Health policy, increase CHC reimbursement rates and improve clinical outcomes

Reporting Evolution

Previous Processes

1. Reported on production data

Issues:

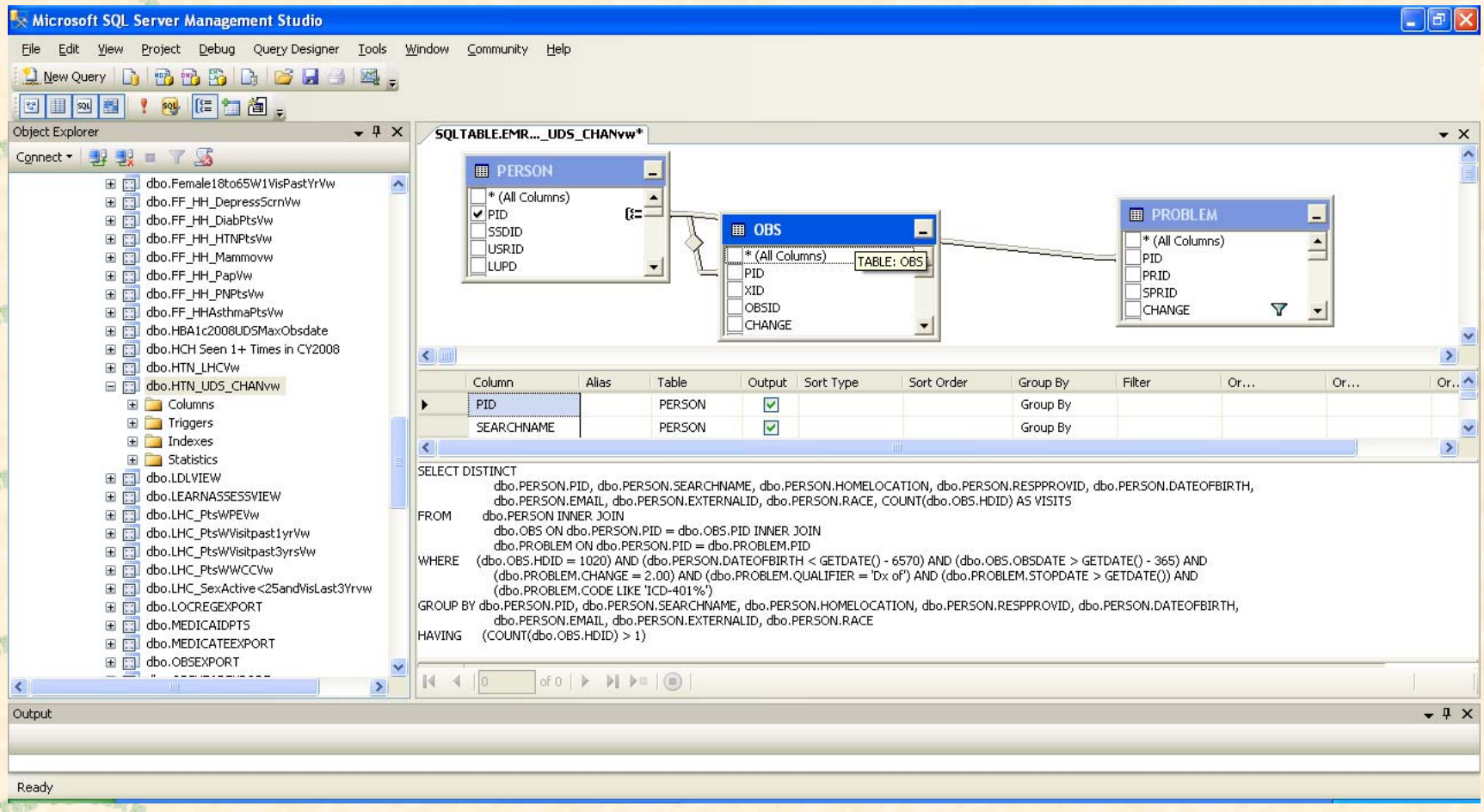
- slowed down application users
- limited our ability to create complex reports because we would void our vendor agreement by creating views, etc.

2. Extracted data from EMR and PM applications into separate databases on a SQL server

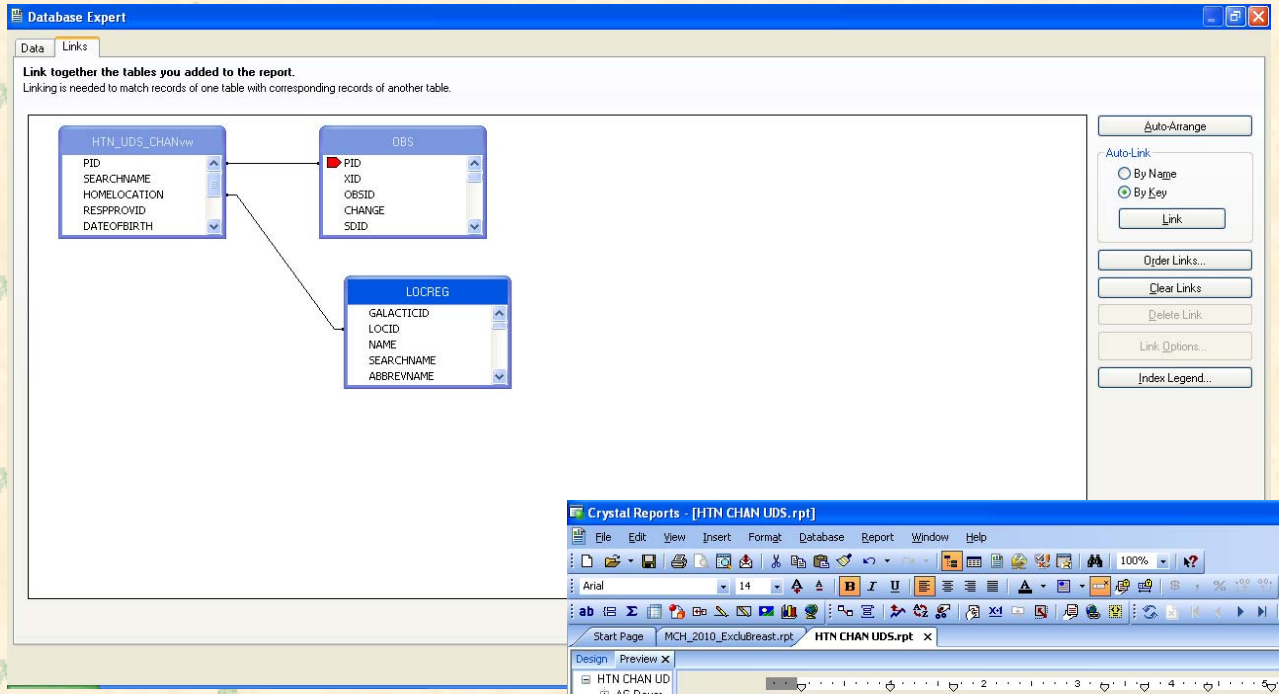
Issues:

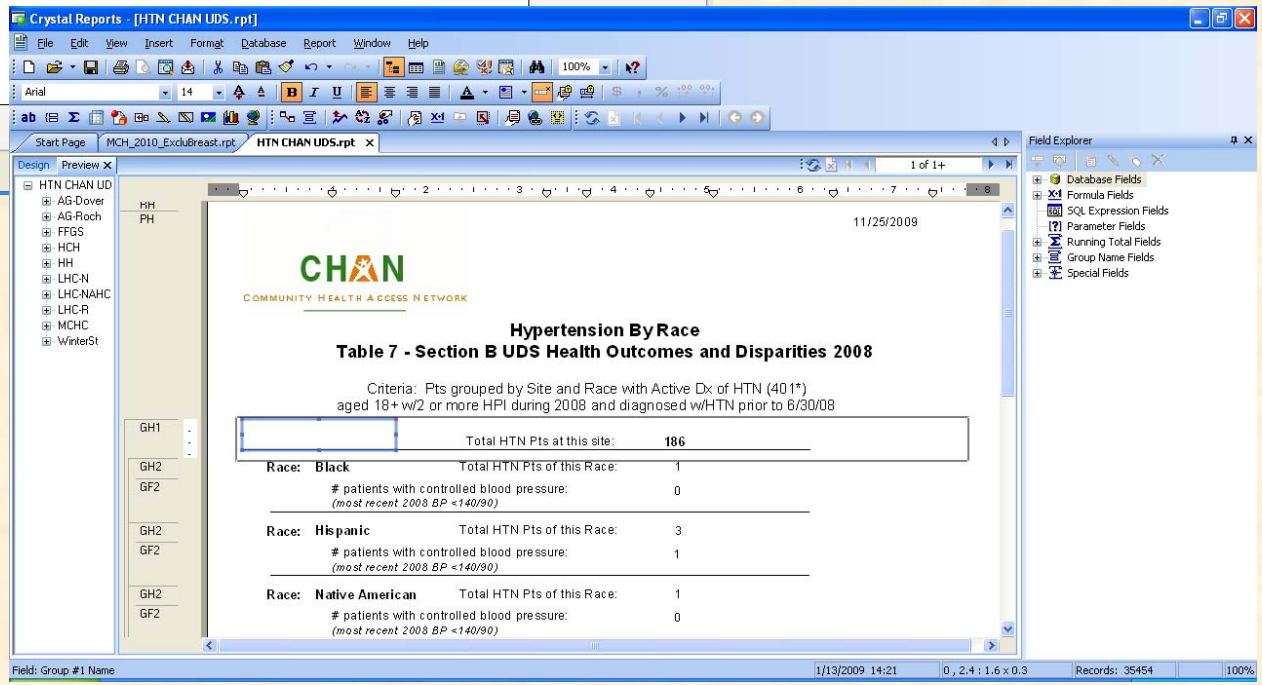
- still difficult to combine data from EMR and billing sources
- required advanced programming skills
- hardware quickly became overloaded and retrieval was extremely slow

Prior to the creation of the Data Warehouse we used Microsoft SQL views to write a script to select the patients:



Then using Crystal Reports join the patient population with the clinical data needed:





This is an example of the report after hours of vetting data and formatting:

What was our VISION for an enhanced Data Warehouse?

To build a reliable source of standardized data:

- easily and securely accessible
- allows benchmarking and reporting (federal UDS, State of NH and others) for trending clinical care
- allows member health centers to participate in Medical Home and Meaningful Use initiatives
- for Patient case management
- aid administrators to track operational measures

Requirements of a system to meet the Vision

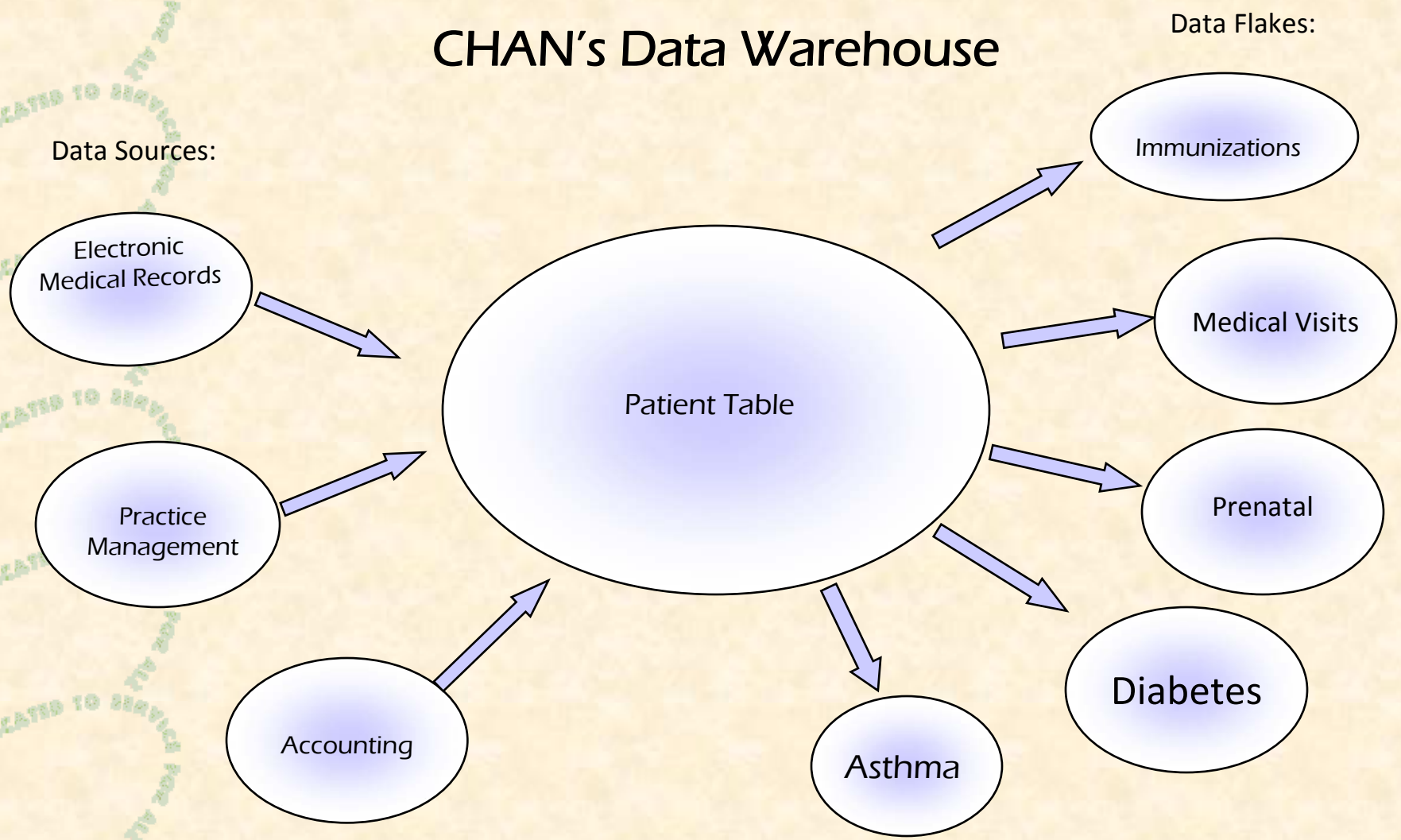
- Flexibility to meet changing reporting needs
- Produce accurate, auditable reports that are easy to read and understand – yet maintain HIPAA standards
- User-friendly for report developers and end users
- Has ability & capacity to include data from multiple in-house sources
- Has ability & capacity to include data from outside entities
- Allows for drill down from summary report data

Reporting Evolution (cont)

Current Processes

- Extracting data from EMR and PM systems to a combined data warehouse on SQL Server 2008
- Programming not needed because data fields are CHAN staff created for frequently used measures i.e., age-in-years, date-last-well-visit
- Data ‘flakes’ are disease specific i.e., Diabetes, Immunizations, Asthma
- All data from EMR and PM available for each patient
- Updated hardware and overnight loading of ‘pre-fabricated’ fields ***speeds up*** the report processing!!!!!!

CHAN's Data Warehouse



Data is extracted from sources nightly and loaded in Data Warehouse. Patient table is populated based on definitions required by various outside agencies (i.e., HRSA defines diabetic patient as 18-75yrs with diagnosis of Diabetes and 2+ medical visits within the reporting year).

Previous report without details:

Diabetes Compliance Report

Total # of Patients with Diagnosis of DIABETES **XXX**

Patients with HgA1c tested twice within past 12 months: XXX XX%

Patients with HgA1c within past 3 months: XXX XX%

Patients with BMI in the past 12 months: XXX XX%

The diabetes patients selected for this report have had 2+ visits within the past year (documented by HPI), are 18+ years of age and have a Dx of diabetes (ICD-250*) on their EMR problem list.

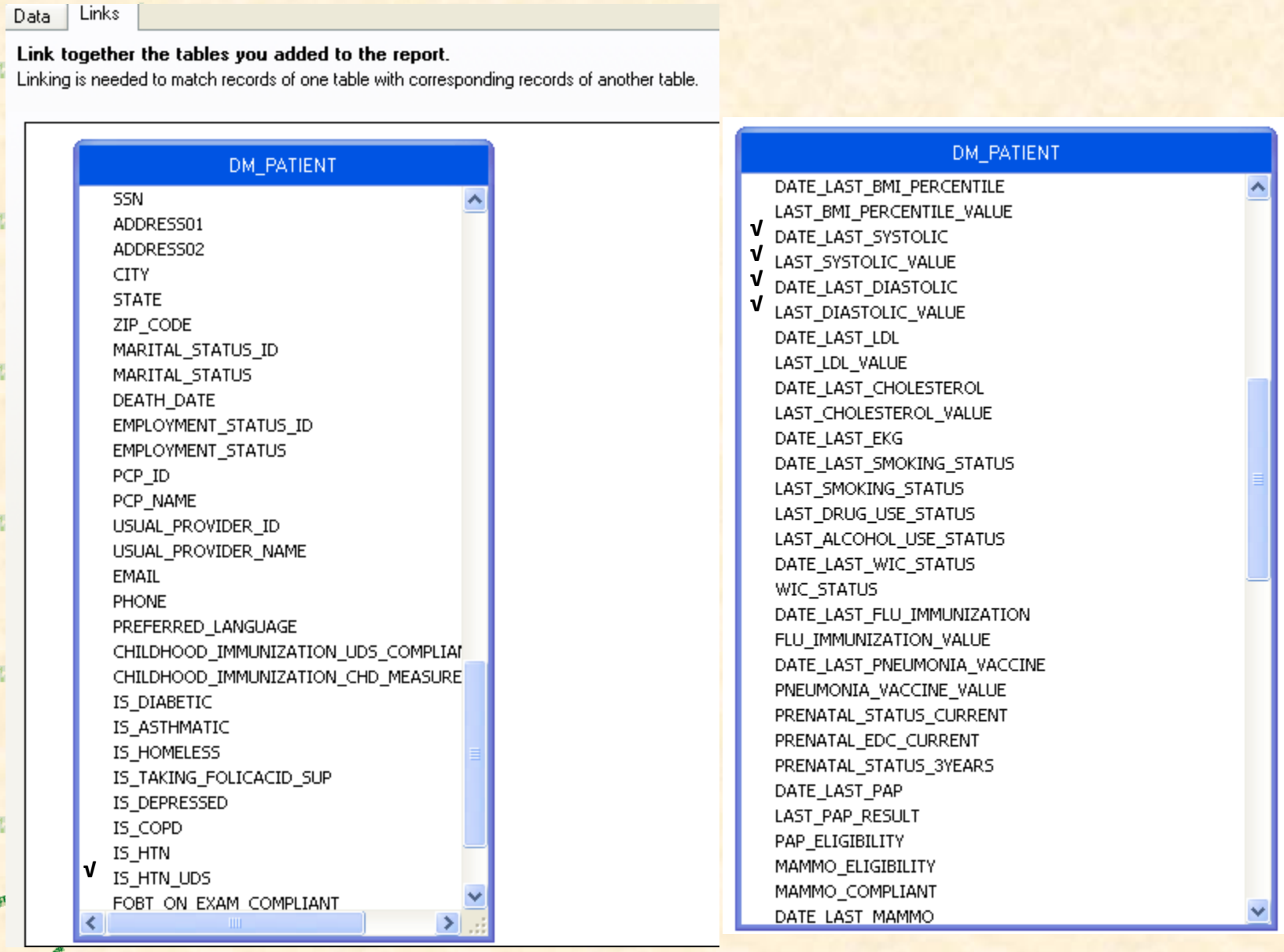
Current report with details to allow user to quickly identify outliers:

				DATE_LAST_A1C	LAST A1C VALUE	COUNT A1C IN LAST YR	DATE LAST LDL	LAST LDL RESULT	DATE LAST MICROALBUMIN	PT 55YO+ W ACE OR ARB RX?	DATE LAST BP	LAST BP VALUE	DATE LAST VISUAL FOOT EXAM	
	A	F	57Yr	03/16/2010	6.5	1	12/08/2009	101		Y	03/30/2010	150/100	03/30/2010	
	A	M	73Yr	12/31/2009	6.0	3	12/31/2009	92	06/22/2009	Y	04/02/2010	148/74	04/02/2010	09/
	A	F	63Yr	05/17/2010	7.9	5	04/14/2010	81	01/03/2008	Y	04/13/2010	150/68	04/13/2010	04/

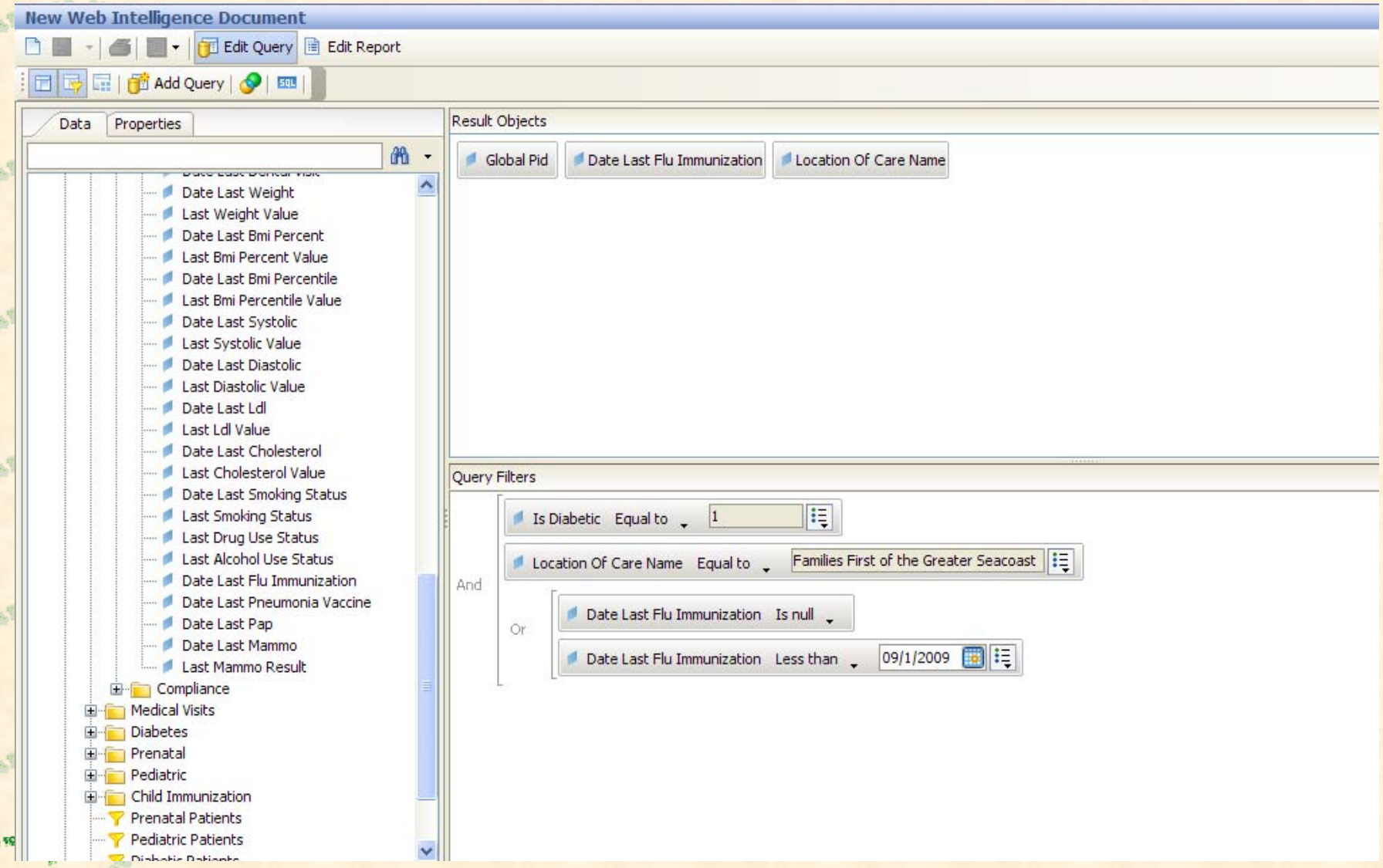
Summary

#Pts w/latest A1c within year and <7%	144	49.66%
#Pts w/latest A1c within year and =>7% and <=9%	94	32.41%
#Pts w/latest A1c within year and >9%	41	14.14%
#Pts w/A1c tested 2+ times in past yr	233	80.34%
Average A1c for all Pts at this site	7.34	
#Pts w/LDL tested in past yr	232	80.00%
#Pts w/LDL < 100 in past yr	147	63.36%
	115	39.66%

Today we can choose data based on pre-fabricated measures in a one step process:



Today we can offer users access to their own data to create WEBI reports based on the pre-fabricated measures:



Future Process Goals

Where we are going

- Continue to add “flakes”
- Allow users to create their own simple reports using our pre-fab fields in Business Object’s Web Intelligence application
- Using Xcelsius, develop dashboards for clinical and administrative staff
- Add other outside agency data and users

Successes

- **CHAN** has combined complex disparate data to allow for retrieval from one data source simplifying our structure and reducing maintenance of multiple databases
- Users are empowered by accessing their own agency's data securely with tags to define the derivation of each field
- Data is more transparent which adds to report reliability
- Report development time has been drastically reduced due to streamlined one-to-one relationship between patient and clinical observations
- Our enhanced reporting capability has made us an attractive partner – one agency has already signed a MOA with us