

Diabetes “ABC” Project System Intervention

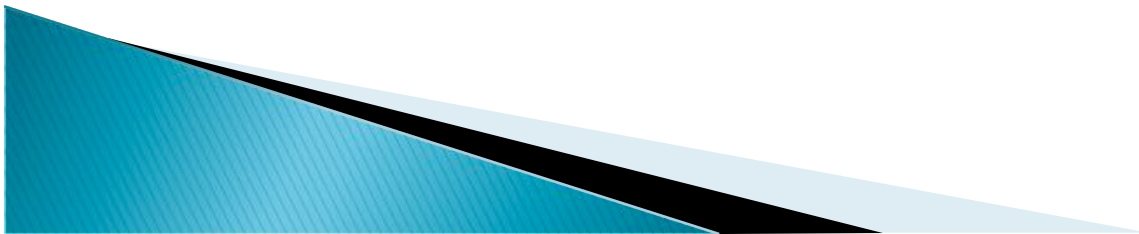
Karen Sakala, RN BSN, PCMH–CCE
Diabetes Advisory Council
June 20, 2014



New Mexico
PRIMARY CARE
ASSOCIATION

Systems Intervention

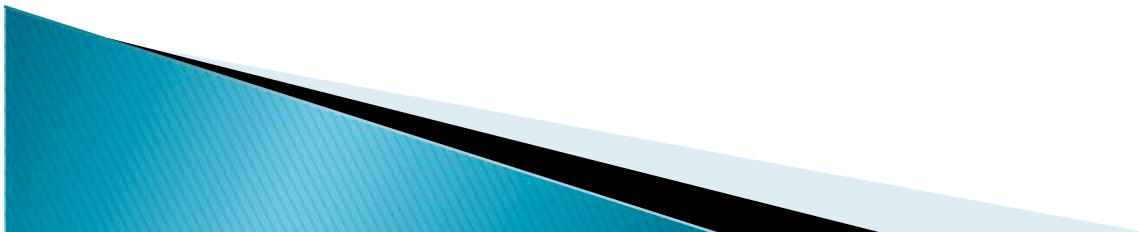
- ▶ Focused on Community Health Centers (FQHCs) in NM
- ▶ Goal: To improve the “ABCs” of diabetes
 - FY 2009–10: Assessment questionnaire
 - FY 2010–11: Work with one CHC with a high % of patients with diabetes and an EHR
 - FY 2011–12: Add another CHC with a different EHR vendor
 - FY 2012–13: Continue to work with the two CHCs. Spread learnings to other CHCs with the same EHRs (11 total)



What is an FQHC?



- ▶ Federally Qualified Health Center
 - Non-profit private or public entities
 - Have a community board of directors, 51% are patients
 - Serve medically underserved areas or populations
 - Serve all people, regardless of their insurance status or ability to pay
 - Receive a Federal “330” Grant to help compensate for the loss of revenue



Focus of the Work (We Thought)

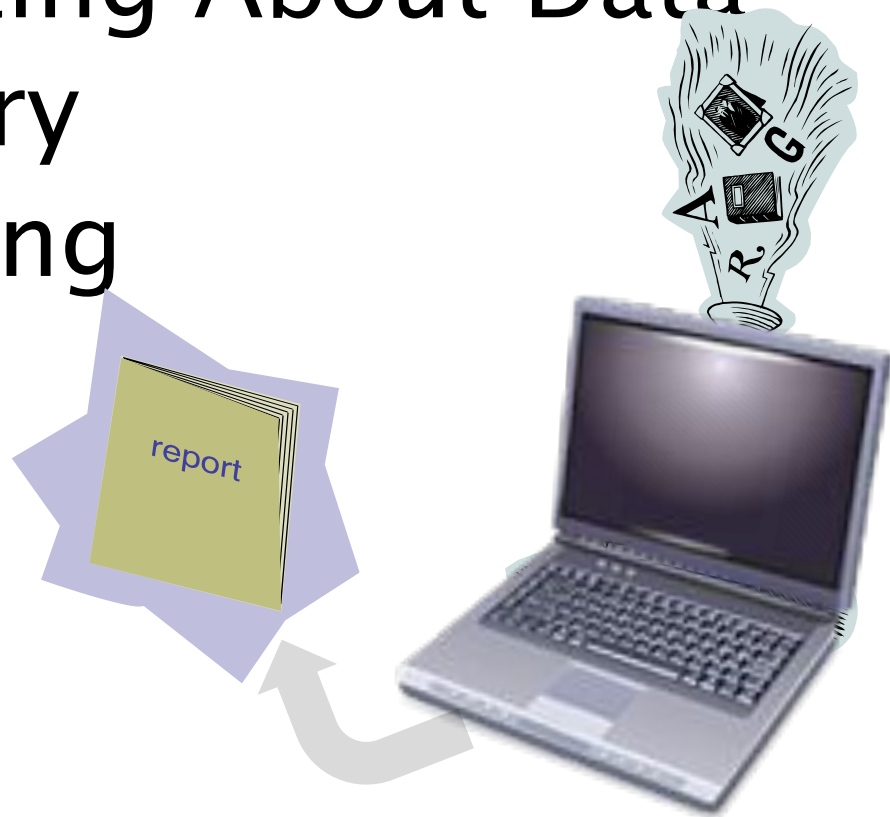
- ▶ **Communicate with Providers**
 - Standards of Practice / Clinical Guidelines
 - Show them the data & compare it to the standards



Focus of the Work (In Reality)

Data

- Communicating About Data
- Data Recovery
- Data Reporting



Electronic Health Record

- ▶ Patient Demographics
- ▶ Scheduling
- ▶ Billing Information
- ▶ Chart Documentation
- ▶ Referrals
- ▶ Orders

Practice Management



EHR



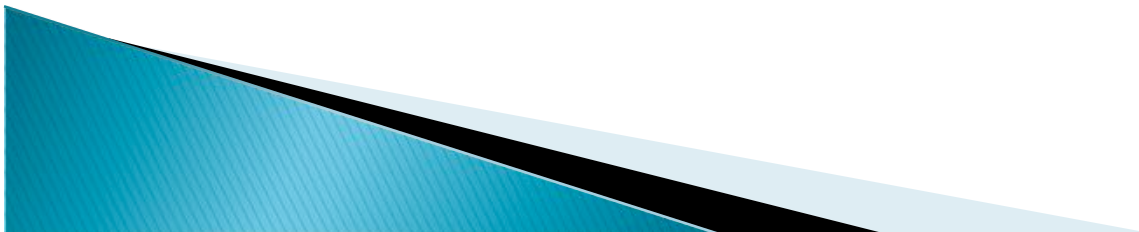
Communicating About Data

Learning a whole new language



Test Name
Request Order

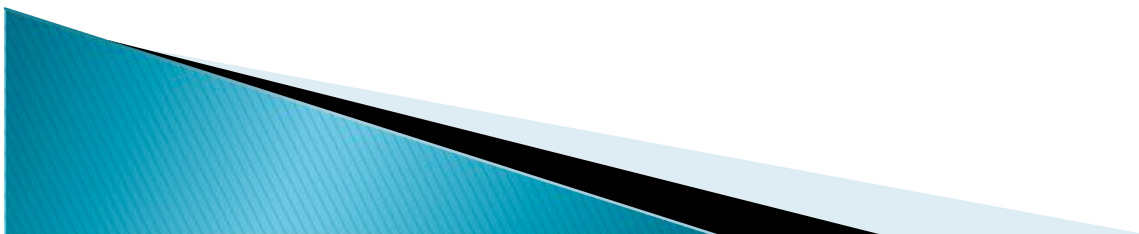
Pt.	DOS	Test Name	Results	Vitals
1	9/27/2010	HgbA1c	10.3	
	9/27/2010	LDL	96	100/60
2	7/15/2010	A1c	6.2	140/72
3	8/24/2010	Hemoglob	7.7	
	9/30/2010	A1c	8.3	
	10/30/2010	Hemoglob	11.0	116/56
4	1/19/2010	HgbA1c	0.081	
	4/22/2010	A1c	7.3	
	7/23/2010	A1c	6.8	
	10/24/2010	A1c	6.9	
	10/24/2010	LDL	111	122/80

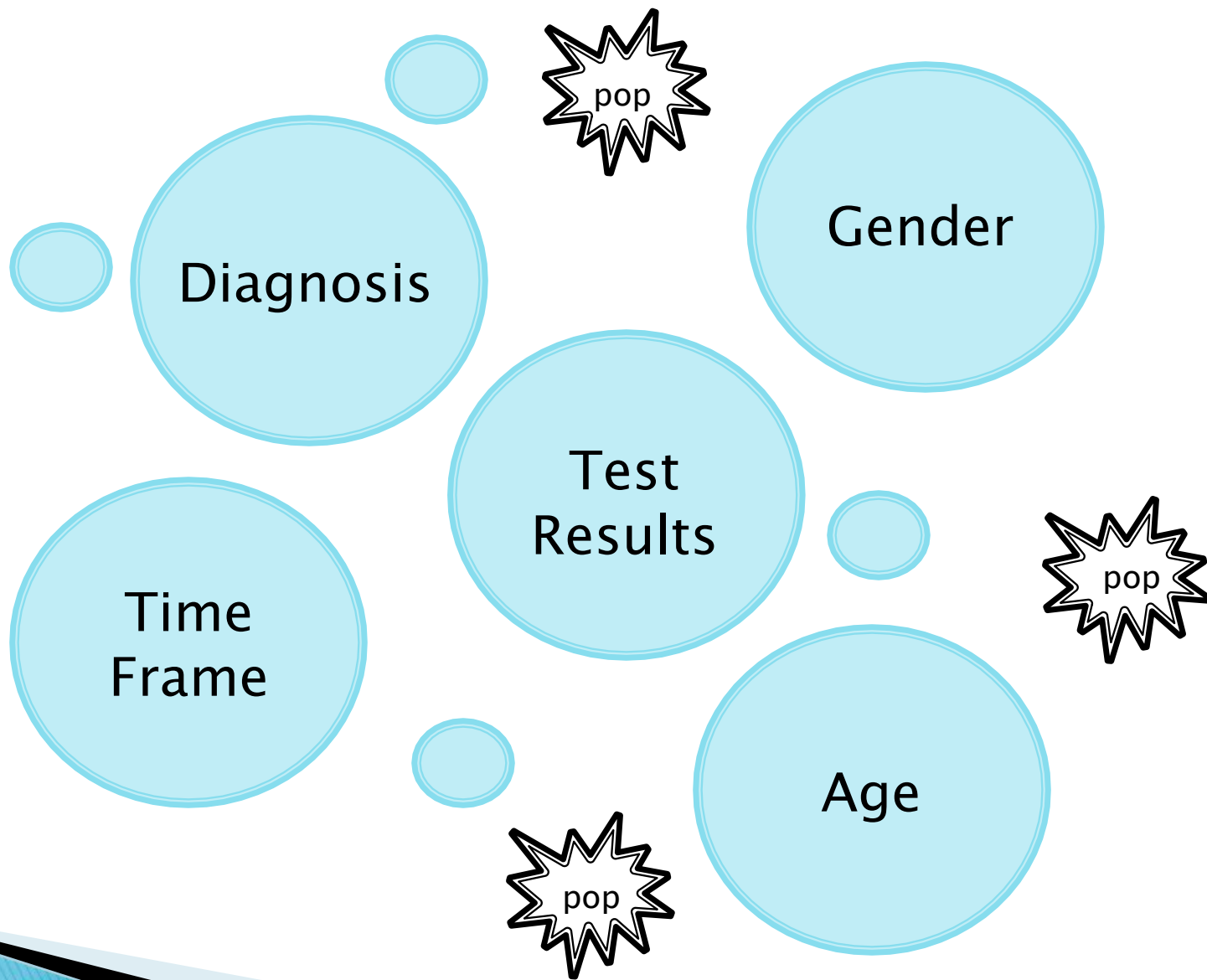


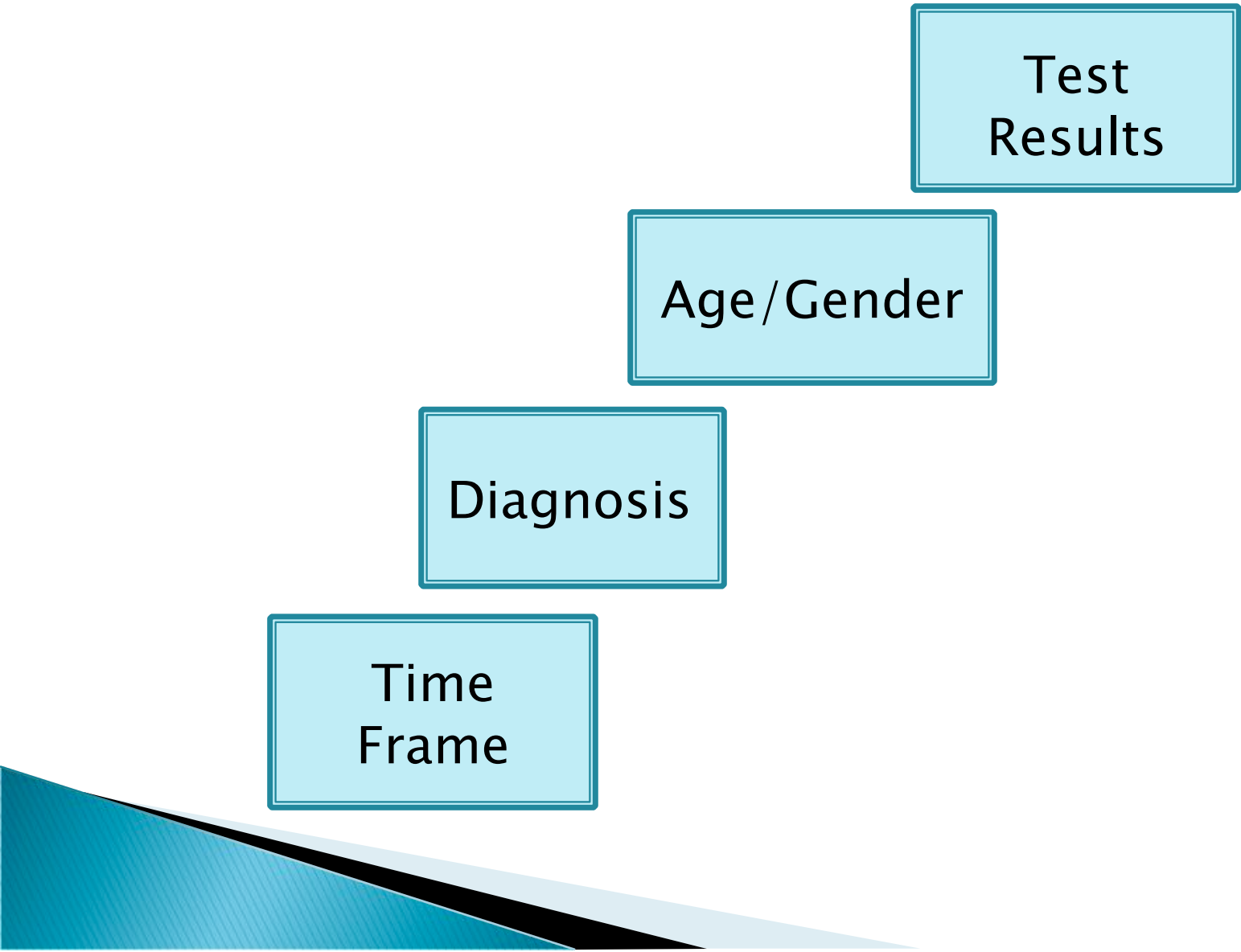
Pt.	DOS	Test Name	Results	Vitals
1	9/27/2010	HgbA1c	10.3	
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2	7/15/2010	A1c	6.2	140/72
3	8/24/2010	Hemoglob	7.7	
	9/30/2010	A1c	8.3	
	10/30/2010	Hemoglob	11.0	116/56
4	1/19/2010	HgbA1c	0.081	
	4/22/2010	A1c	7.3	
	7/23/2010	A1c	6.8	
	10/24/2010	A1c	6.9	
	10/24/2010	LDL	111	122/80



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	9/30/2010	A1c	8.3	
	10/30/2010	Hemoglob	11.0	116/56
4	1/19/2010	HgbA1c	0.081	
	4/22/2010	A1c	7.3	
	7/23/2010	A1c	6.8	
	10/24/2010	A1c	6.9	
	10/24/2010	LDL	111	122/80







Test
Results

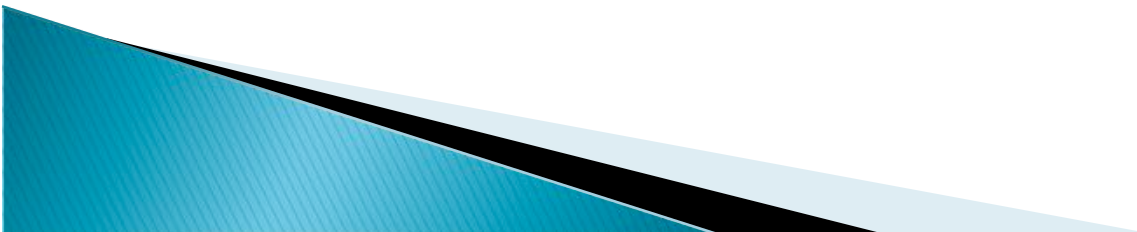
Age/Gender

Diagnosis

Time
Frame

Year 2 Results – Baseline

- ▶ EHR data for self-pay patients in Oct. 2010 (1-1-10 through 10-31-10)
 - Found only 61% of the number of patients from the previous year's UDS Report (billing data)
 - Only 6% had A1c, BP, LDL-C done during that time
 - LDL-C – Only 7% had a test done



Questions

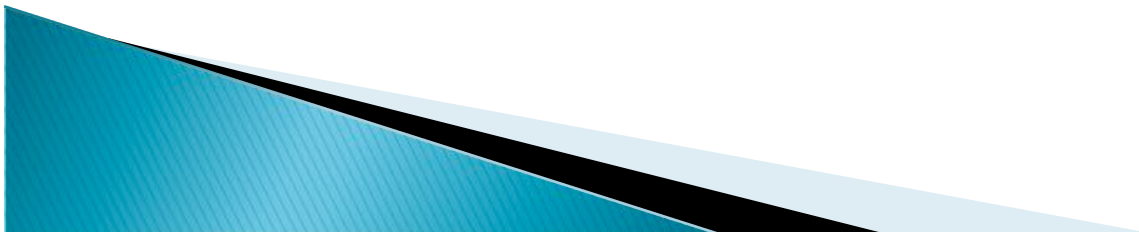
- ▶ Where are all the patients with DM?
- ▶ Why did only 6% of patients have all 3 tests?
- ▶ Why did only 7% of patients have an LDL-C?
- ▶ Was this a documentation issue or an issue of sub-standard care?



Answers

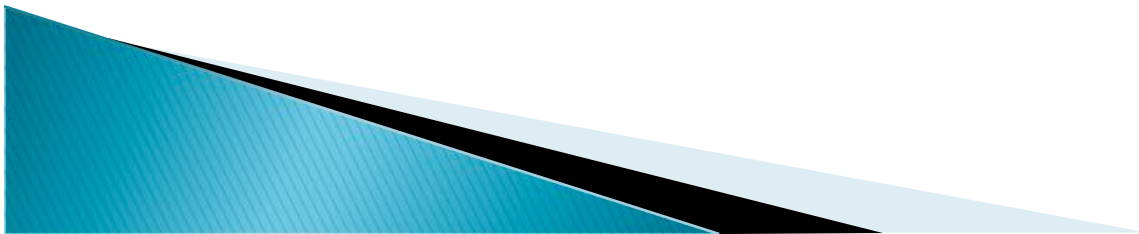


- ▶ Data queries were reconfigured – found the “missing” patients.
- ▶ Did “spot checks” on individual charts to see if ABC tests had been done – they were.
- ▶ Documentation issues were:
 - A1c tests done by standing order, but no order in the chart
 - LDL-C tests sent to a reference lab, reports weren’t consistently closed out by providers



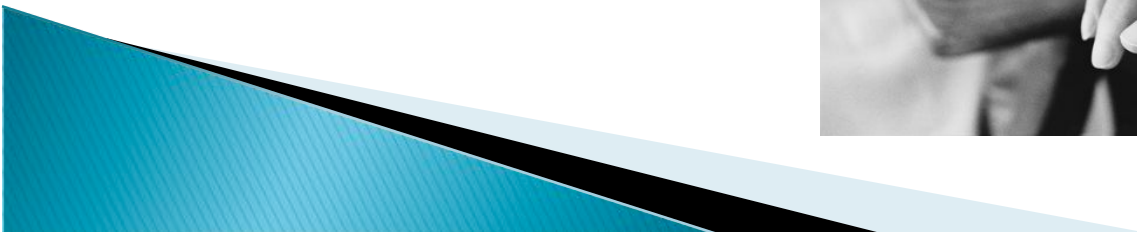
System Intervention

- ▶ Figured out data layering parameters and were consistent in data collection
- ▶ Re-trained HC staff/providers on appropriate areas to document information
- ▶ Had IT run reports (monthly) to see if documentation had changed



Year Three

- ▶ Added another Health Center with a different EHR vendor
- ▶ Also an early adopter of EHR
- ▶ Had high percentage of patients with DM



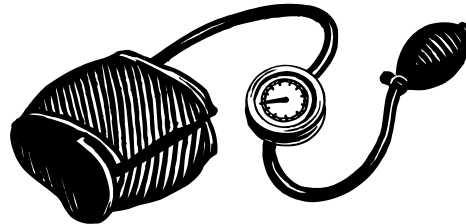
Data Recovery

The EHR as a Black Hole



Questions:

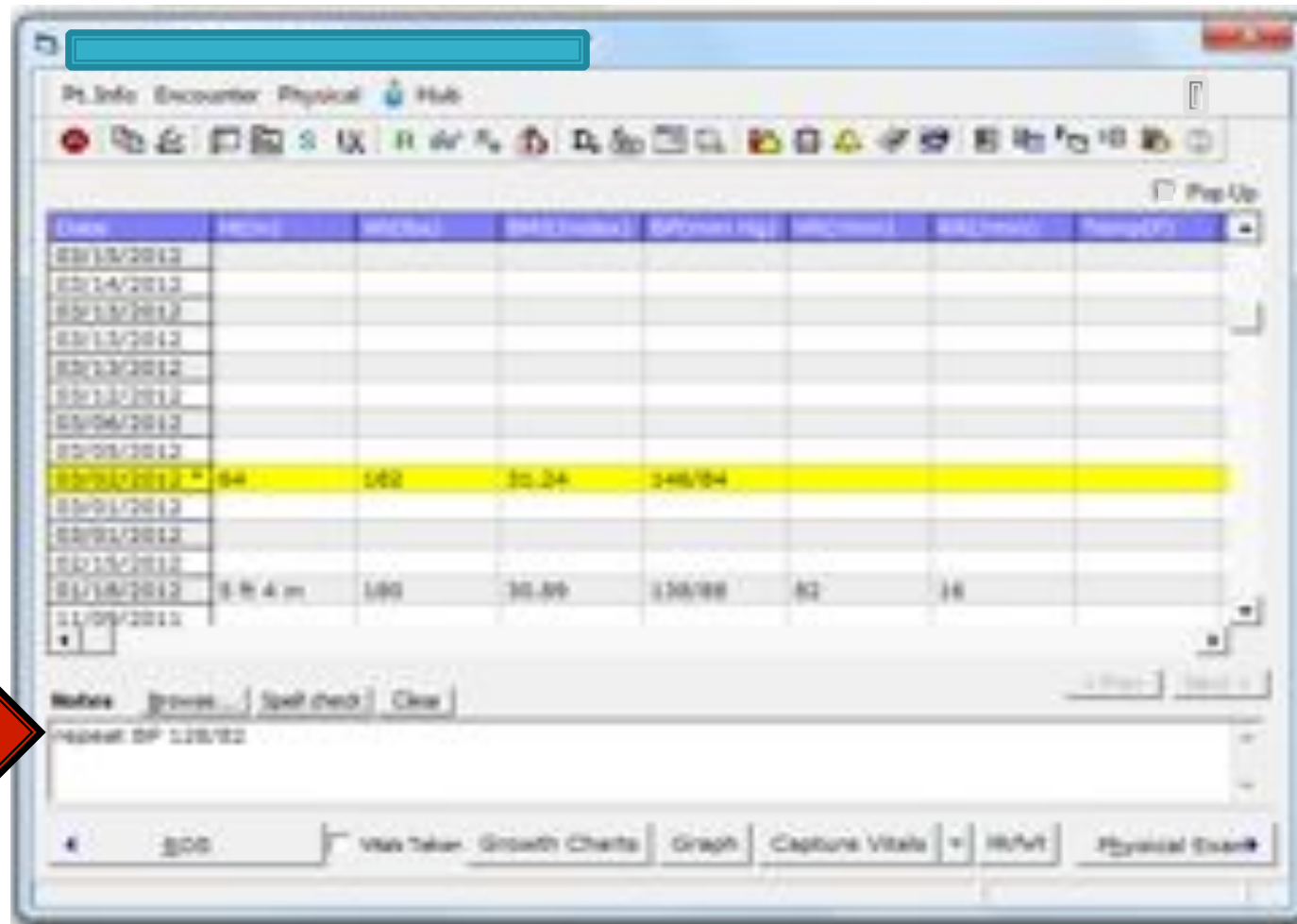
- ▶ Why were blood pressure results missing?



- ▶ What caused lab tests (that were done) to be missed in a data query?



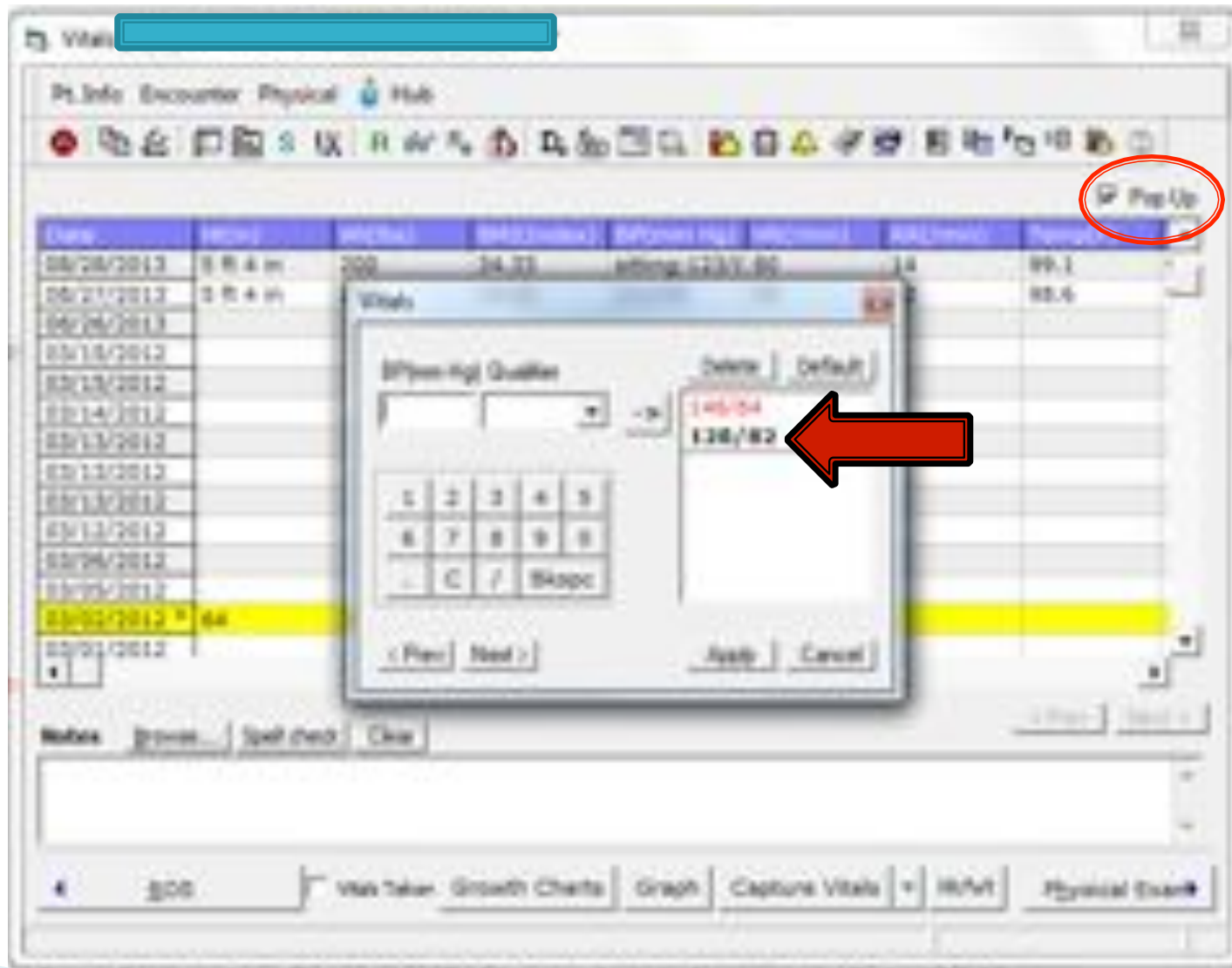
Answers:



The screenshot shows a software window with a table of data. The table has columns for Date, Weight, Height, BMI, and other metrics. The row for 03/01/2012 is highlighted in yellow. Below the table, there is a 'Notes' field with the text 'Repeat BP 1/15/12'. A red arrow points to this field.

Date	Weight	Height	BMI	BP (mmHg)	HR (b/min)	Temp (°C)
03/13/2012						
03/14/2012						
03/15/2012						
03/16/2012						
03/17/2012						
03/18/2012						
03/19/2012						
03/20/2012	64	162	30.24	146/94		
03/21/2012						
03/22/2012						
03/23/2012						
03/24/2012	64.4	160	30.89	138/88	82	36
03/25/2012						

Notes: Repeat BP 1/15/12



Treatment

Pt. Info Encounter Physical Hub

Rx Cur Rx Add Remove Education Formularies Pop Up Generate Rx By 3d Code Group

Routine gynecologica Diabetes mellitus wi Others

Comm	Name	Strength	Formul	Take	Route	Frequenc	Duration	Disp	Refill	Auth	AWP	Stop Dr
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Lab Browse ...

Pap Lb, Ct-Ng

Diagnostic Imaging Browse ...

Procedures Browse ...

Pt Instructions Discussions Browse ... Spell chk Cr Outgoing Referral eClnSense Add Info New Action

Patient's A1c was 8.6 today

Preventive Med Print Orders Print Script Targets Instructions Billing



Lab Results

Patient: [Redacted] Status: Open Reviewed

Provider: [Redacted]
Facility: [Redacted]
Assigned To: [Redacted]

Lab Information
Lab: HEMOGLOBIN A1C
Order Date: 2/15/2012
Collection Date: 104
Time: 1
Reason: [Redacted]
Actual Testing: Not Recorded
Ordered Testing: [Redacted]

Specimen
Source: [Redacted]
Description: [Redacted]
Collection Volume: [Redacted]
Units: [Redacted]

Specimen
Received: [Redacted]
Date: 2/15/2012
Result: [Redacted]

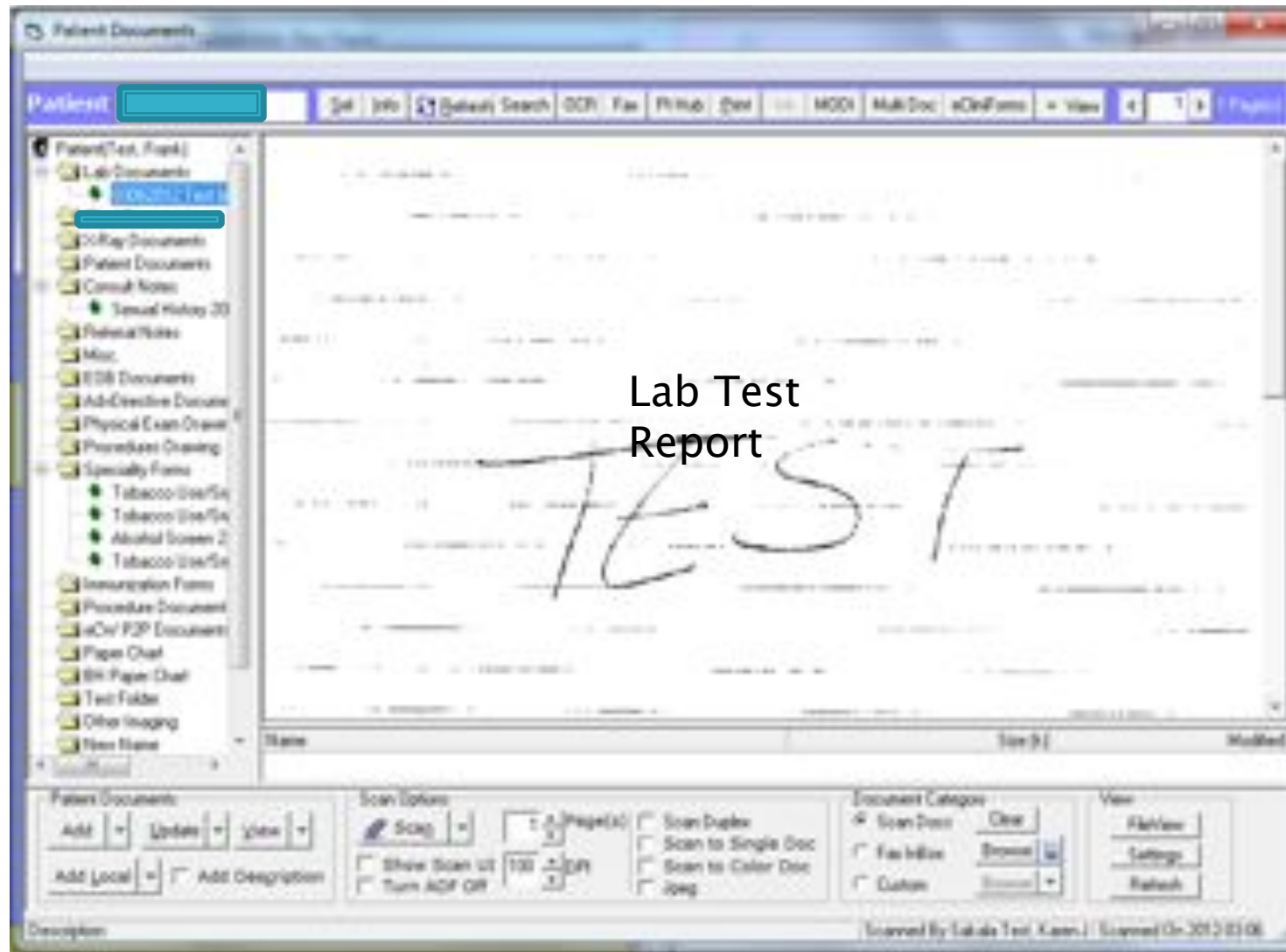
Order Date	Coll. Date	Acc							
02/14/2012									
02/15/2012		8.8							
02/15/2012									

Assessment:
☒ 250.00 Diabetes mellitus without mention of complication
☐ 036.0 Streptococcal infection
☐ 957.50 Hypertension

Clinical Notes:
[Redacted]

Internal Notes:
[Redacted]

Buttons: Custom Reports Print Individual Print Display Graph Options
OK Cancel



Lab Results

Patient: [Redacted] Status: Open Reviewed

Provider: [Redacted] Facility: [Redacted] Assigned To: [Redacted]

☐ High Priority
☐ Intensive
☐ Future Order
☐ Cancelled

Lab Information

Lab: Lipid Panel Order Date: 8/28/2013 Collection Date: 8/28/2013 Time: 1

Reason: [Redacted] Actual Fasting: Not Recorded ☒ Ordered Fasting

Specimen

Source: [Redacted] Description: [Redacted] Collection Volume: [Redacted] Units: [Redacted]

Results

☒ Received Date: 8/28/2013 Result: [Redacted]

Order Date	Coll. Date	Cholesterol	Triglyceride	HDL Cholesterol	LDL Cholesterol
8/28/2013		208	155	48	128

Assessments:

☐ 480 BG Alpha, unspecified, unspecified status
☒ 416.2 Dynamic total cholesterol of coronary artery

Clinical Notes:

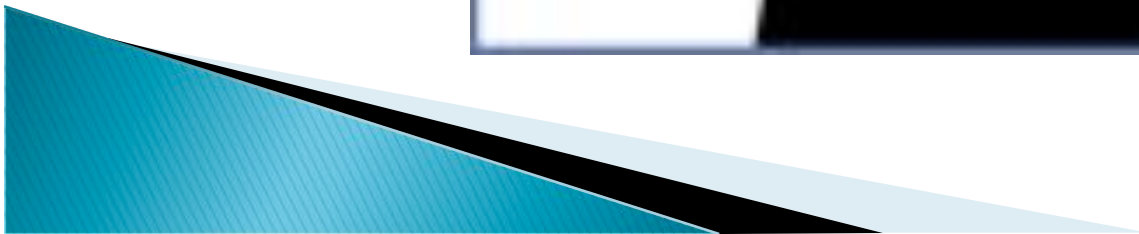
Notes: Time Stamp, Print, Check Testing

Interval Notes:

Custom Reports Print Interval Print Display Graph Options

Print Print (6) OK Cancel Log (6) Log (6)

Data Hiding in Plain Sight



Vital

Pt. Info Encounter Physical  Hub



☐ Print

Date	Weight	Weight	Weight	BP (mmHg)	HR (b/min)	RR (b/min)	Temp (°C)
08/28/2012	8.84 in	200	34.33	111/78	80	14	99.1
08/21/2012	8.84 in	200	34.33	111/78	80	12	99.6
08/20/2012							
08/18/2012							
08/15/2012							
08/14/2012							
08/13/2012							
08/12/2012							
08/13/2012							
08/13/2012							
08/09/2012							
08/05/2012							
08/02/2012	44	180	76.24	83/56			
08/01/2012							

Notes

Lab Results

Patient: [Redacted] Status: ☐ Copied ☒ Reviewed

Provider: [Redacted]

Facility: [Redacted]

Assigned To: [Redacted]

☐ High Priority
☐ Amoxicillin
☐ Future Order
☐ Cancelled

Lab Information

Lab: HEMOGLOBIN A1C

Order Date: 2/15/2012

Collection Date: [Redacted]

Time: [Redacted]

Reason: [Redacted]

Actual Testing: Not Recorded

Specimens

Source: [Redacted]

Description: [Redacted]

Collection Volume: [Redacted]

Units: [Redacted]

Specimen

☒ Reviewed Date: 2/15/2012 Result: [Redacted]

Order Date	Coll. Date	Age							
08/14/2012									
02/15/2012		8.8							
07/05/2012									

Assessments:

☒ 250.00 Diabetes mellitus without mention of complication

☐ 008.0 Streptococcal infection

☐ 907.01 Hypertension

Notes: [Redacted]

Clinical Notes: [Redacted]

Referral Notes: [Redacted]

Buttons: Custom, Reports, Print, [Redacted], Display Graph, Options, [Redacted], [Redacted]

EHR Set Up Security Issues

▶ Test Name

- A1c
- a1c
- Hgb A1c
- Hemoglobin A1c

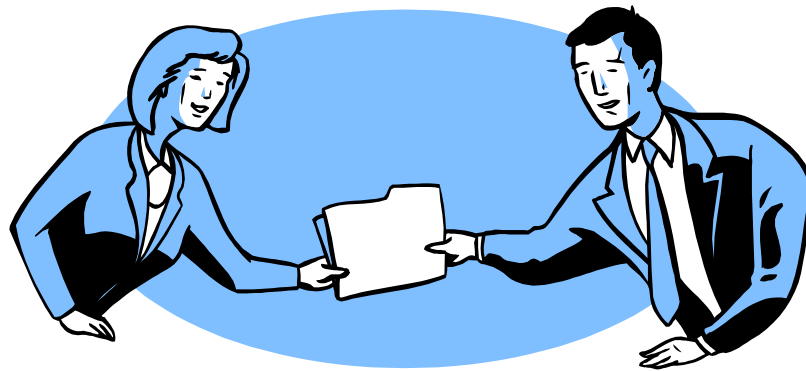
▶ Loinc Codes

- 10 different codes
- Required for billing
- If no Loinc Codes, not picked up on a report



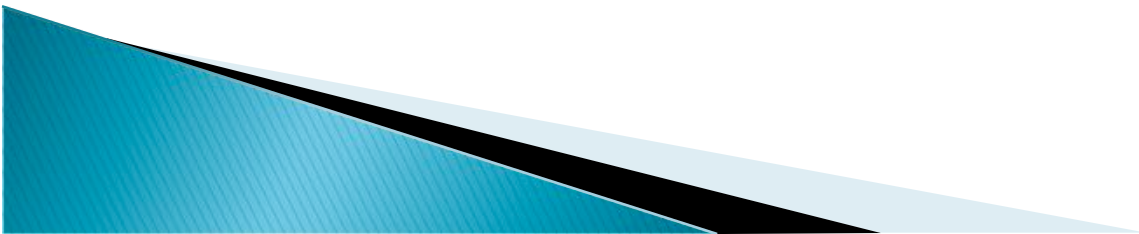
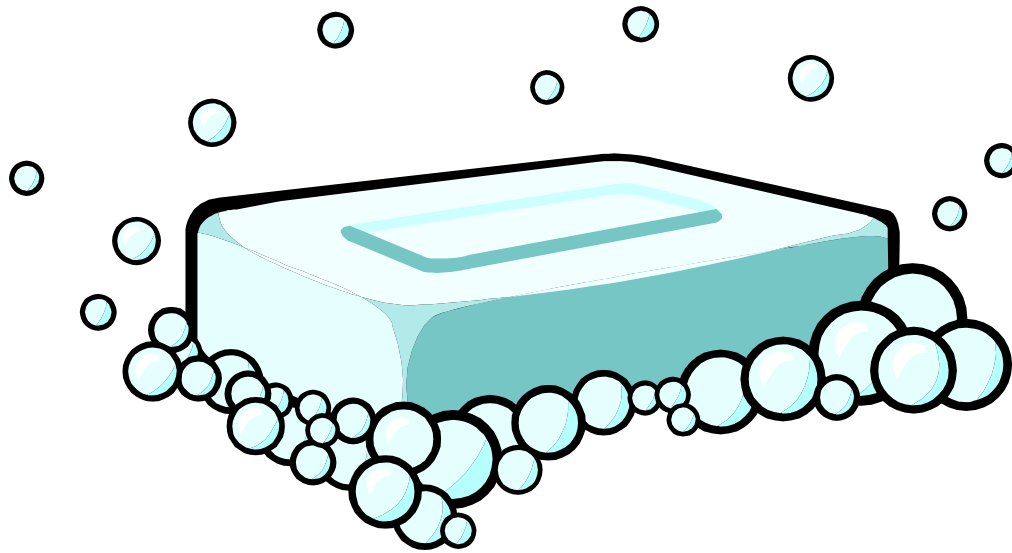
System Intervention

- ▶ Train, train, & re-train staff/providers on proper documentation
- ▶ Give regular feedback on how they are doing
- ▶ Set up proper security to avoid improper set up of the EHR

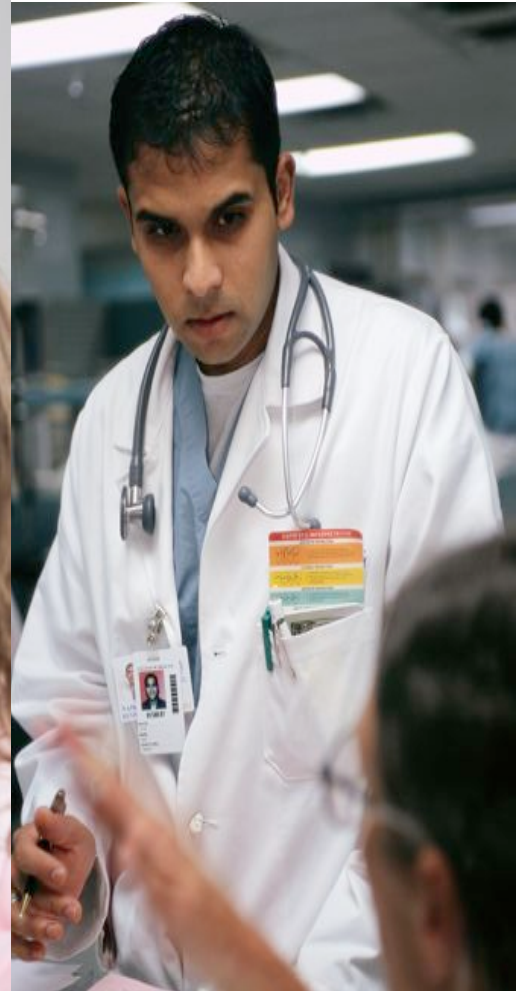
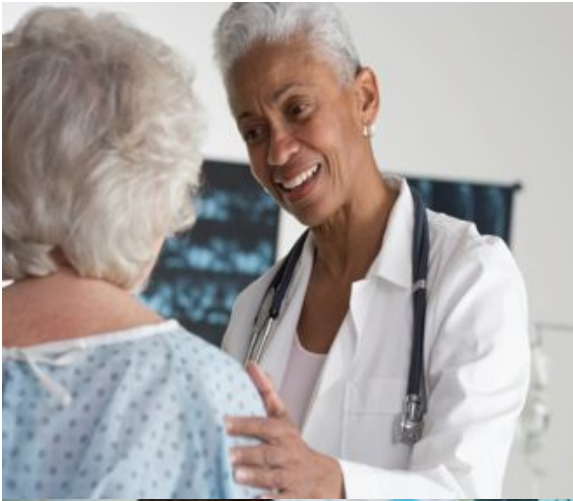


Data Reporting

Getting a Clean Report



Reporting Data by Provider



Pt #	DOS	A1c	LDL	BP	Prov.
65.1	Jan 3, 2011	7.7			JM
65.1	Apr 4, 2011	8.1			JM
65.1	Jul 1, 2011	8.0			JM
65.1	Aug 26, 2011	9.0	11		AG
65.1	Jan 18, 2012	9.0	32		AG
65.1	Feb 27, 2012			170/60	AG



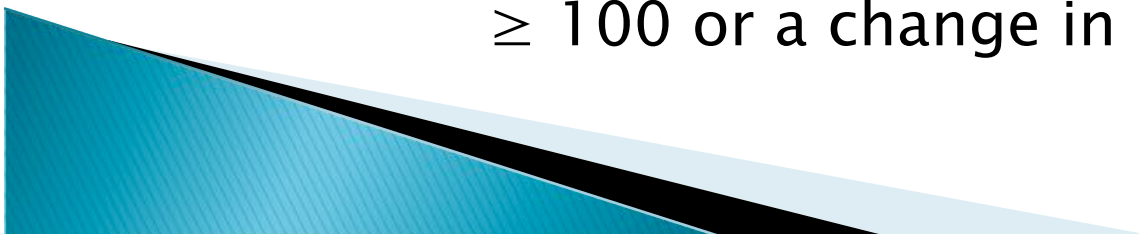
Pt #	DOS	A1c	LDL	BP	Prov.
91.1	Jan 24, 2011	7.8			MM
91.1	Mar 28, 2011	7.9			MM
91.1	May 23, 2011	8.5			MM
91.1	Dec 1, 2011	6.7	103		JF
91.1	Jan 5, 2012			188/76	JF
91.1	Feb 3, 2012			198/65	MB



Scrubbing the Data – Analyzing for Compliance to Standards

▶ Right care at the right time.

- A1c: < 7.0 – every 6 months
 ≥ 7.0 – every 3 months
- BP: $< 130/80$ – every visit (last BP reported)
($< 140/90$ was also assessed)
- LDL-C: < 100 – yearly
 ≥ 100 or a change in meds – every 6 mos



Quantity

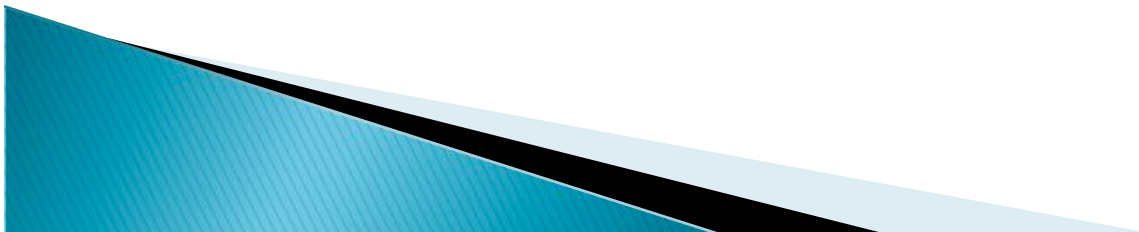
1-1-11 through 2-29-12

A1c

BP

LDL

Pt. #	A1c	Date	A1c	Date	A1c	Date	A1c	Date	A1c	Date	S-BP	D-BP	Date	LDL	Date	LDL	Date	LDL	Date
1	9.4	10/6/2011	10.5	10/11/2011	8.5	2/2/2012					130	68	2/2/2012	101	2/2/2012				
2	11.9	10/13/2011	12.9	2/3/2012							120	84	2/6/2012	182	10/13/2011	95	2/3/2011		
1	8.2	3/22/2011	7.2	6/28/2011	7.3	10/11/2011	7.7	1/30/2012			100	60	2/1/2012	28	3/22/2011	43	6/28/2011	46	1/30/2012
4	6.5	3/17/2011	6.1	10/31/2011							120	62	10/31/2011	66	3/7/2011	62	10/31/2011		
5	8.2	1/11/2012									120	90	1/30/2012	73	1/11/2012				
6	11.4	1/12/2012									123	84	2/9/2012						
7	8.9	3/18/2011	9.5	7/22/2011	9.7	10/24/2011	10.0	2/13/2012			140	80	11/10/2011	88	10/24/2011				
8	5.8	12/15/2011									120	83	1/3/2012	86	12/27/2011				
9	8.4	4/19/2011	10.7	8/10/2011	11.3	2/13/2012					130	90	2/27/2012	98	2/13/2012				
10	12.9	5/2/2011	11.9	1/5/2012							100	70	1/5/2012	82	5/2/2011				
11	10.2	2/18/2011	8.2	6/16/2011	11.8	10/25/2011	10.3	2/10/2012			100	80	2/29/2012	91	2/18/2011	116	10/25/2011		
12	8.0	2/22/2011	8.0	5/26/2011	8.5	8/30/2011	7.5	11/2/2011	7.1	2/28/2012	110	60	12/1/2011	140	2/28/2012				
13	7.4	7/12/2011	6.8	10/27/2011							140	73	2/2/2012	105	7/12/2011				
14	6.2	2/11/2011	5.7	8/15/2011	6.0	2/2/2012					130	63	2/6/2012	136	2/11/2011	118	8/15/2011		
15	5.5	8/8/2011									133	73	1/3/2012						
16	11.1	3/31/2011									110	70	4/12/2011						
17	9.7	1/18/2011	8.8	4/25/2011	9.9	8/19/2011	9.7	12/14/2011			142	80	12/27/2011	112	1/18/2011	104	4/25/2011	53	8/19/2011
18	7.6	6/30/2011									124	72	7/7/2011						
19	5.6	11/2/2011									100	60	11/2/2011						
20	6.8	2/9/2011	6.6	9/15/2011							120	80	9/27/2011	71	2/9/2011	84	9/15/2011		



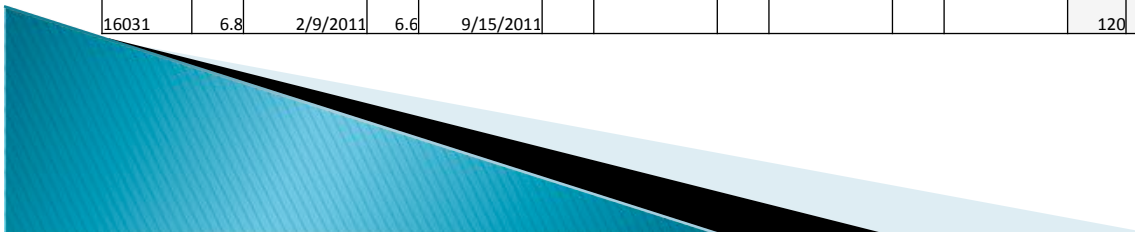
Timing

A1c

BP

LDL

Pt. #	A1c	Date	A1c	Date	A1c	Date	A1c	Date	A1c	Date	S-BP	D-BP	Date	LDL	Date	LDL	Date	LDL	Date
100217	9.4	10/6/2011	10.5	10/11/2011	8.5	2/2/2012					130	68	2/2/2012	101	2/2/2012				
100321	12	10/13/2011	12.9	2/3/2012							120	84	2/6/2012	182	10/13/2011	95	2/3/2011		
10113.1	8.2	3/22/2011	7.2	6/28/2011	7.3	10/11/2011	7.7	1/30/2012			100	60	2/1/2012	28	3/22/2011	43	6/28/2011	46	1/30/2012
10123.1	6.5	3/17/2011	6.1	10/31/2011							120	62	10/31/2011	66	3/7/2011	62	10/31/2011		
101274	8.2	1/11/2012									120	90	1/30/2012	73	1/11/2012				
101290	11	1/12/2012									123	84	2/9/2012						
10395	8.9	3/18/2011	9.5	7/22/2011	9.7	10/24/2011	10.0	2/13/2012			140	80	11/10/2011	88	10/24/2011				
10825	5.8	12/15/2011									120	83	1/3/2012	86	12/27/2011				
11696	8.4	4/19/2011	10.7	8/10/2011	11.3	2/13/2012					130	90	2/27/2012	98	2/13/2012				
11808	12.9	5/2/2011	12	1/5/2012							100	70	1/5/2012	82	5/2/2011				
12166	10.2	2/18/2011	8.2	6/16/2011	12	10/25/2011	10.3	2/10/2012			100	80	2/29/2012	91	2/18/2011	116	10/25/2011		
1257	8.0	2/22/2011	8.0	5/26/2011	8.5	8/30/2011	7.5	11/2/2011	7.1	2/28/2012	110	60	12/1/2011	140	2/28/2012				
1366	7.4	7/12/2011	6.8	10/27/2011							140	73	2/2/2012	105	7/12/2011				
13844	6.2	2/11/2011	5.7	8/15/2011	6.0	2/2/2012					130	63	2/6/2012	136	2/11/2011	118	8/15/2011		
13945	5.5	8/8/2011									133	73	1/3/2012						
14605	11.1	3/31/2011									110	70	4/12/2011						
15083	9.7	1/18/2011	8.8	4/25/2011	9.9	8/19/2011	9.7	12/14/2011			142	80	12/27/2011	112	1/18/2011	104	4/25/2011	53	8/19/2011
1562	7.6	6/30/2011									124	72	7/7/2011						
15717	5.6	11/2/2011									100	60	11/2/2011						
16031	6.8	2/9/2011	6.6	9/15/2011							120	80	9/27/2011	71	2/9/2011	84	9/15/2011		



Results – A1c

Pt. #	A1c	Date	A1c	Date	A1c	Date	A1c	Date	A1c	Date
1	9.4	10/6/2011	10.5	10/11/2011	8.5	2/2/2012				
2	11.9	10/13/2011	12.9	2/3/2012						
3	8.2	3/22/2011	7.2	6/28/2011	7.3	10/11/2011	7.7	1/30/2012		
4	6.5	3/17/2011	6.1	10/31/2011						
5	8.2	1/11/2012								
6	11.4	1/12/2012								
7	8.9	3/18/2011	9.5	7/22/2011	9.7	10/24/2011	10.0	2/13/2012		
8	5.8	12/15/2011								
9	8.4	4/19/2011	10.7	8/10/2011	11.3	2/13/2012				
10	12.9	5/2/2011	11.9	1/5/2012						
11	10.2	2/18/2011	8.2	6/16/2011	11.8	10/25/2011	10.3	2/10/2012		
12	8.0	2/22/2011	8.0	5/26/2011	8.5	8/30/2011	7.5	11/2/2011	7.1	2/28/2012
13	7.4	7/12/2011	6.8	10/27/2011						
14	6.2	2/11/2011	5.7	8/15/2011	6.0	2/2/2012				
15	5.5	8/8/2011								
16	11.1	3/31/2011								
17	9.7	1/18/2011	8.8	4/25/2011	9.9	8/19/2011	9.7	12/14/2011		
18	7.6	6/30/2011								
19	5.6	11/2/2011								
20	6.8	2/9/2011	6.6	9/15/2011						

< 7.0

7.0-7.9

8.0-9.0

> 9.0



A1c

% of Patients with at least 1 A1c

1st data

2nd data

CHC

96%

96%

84%

Results:

<7.0%

54%

53%

43%

7.0 - 7.9%

16.5%

19%

23%

8.0 - 9.0%

13%

11%

13%

> 9.0%

16.5%

17%

21%

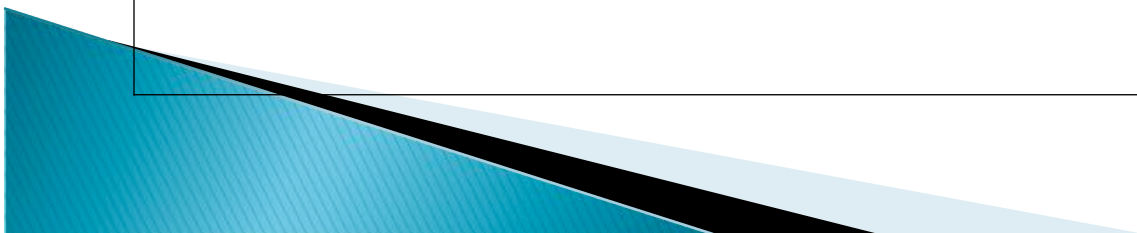
UDS Measure:

≤ 9.0%

83%

83%

79%



BP

% of Patients with at least 1 BP

1st data

2nd data

CHC

99%

100%

100%

Results:

ADA Measure:

<130/80

58%

55%

30%

UDS/MU

Measure:

<140/90

82%

85%

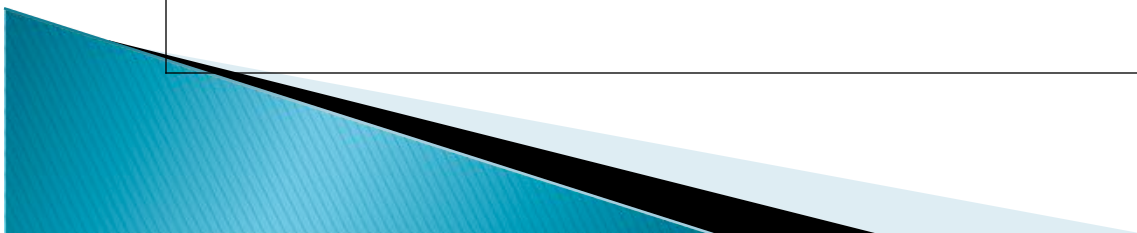
61%

≥140/90

18%

15%

39%



LDL-C

% of Patients with at least 1 LDL

1st data	2nd data	CHC
74%	86%	66%

Results:

<100	60%	62%	59%
≥100	40%	38%	41%

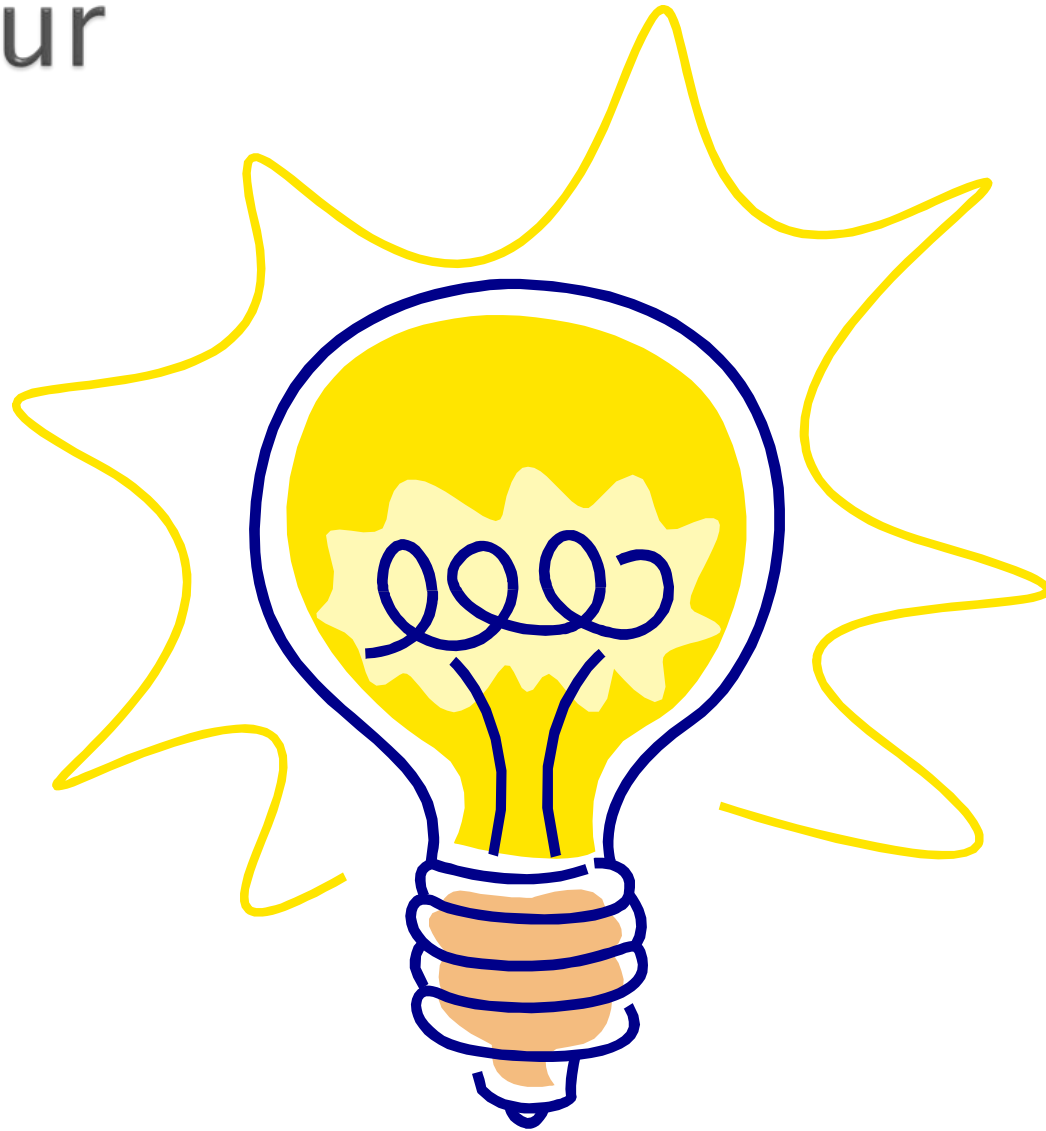


System Intervention

- ▶ Work on getting the correct PCP assigned to each patient
- ▶ Give “report card” to providers with data comparisons at the end of the project year

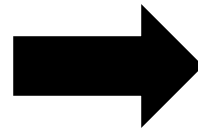


Year Four



Changed Data Reporting

- From time intensive reports and analysis
- To “push of a button” results from Meaningful Use Dashboards

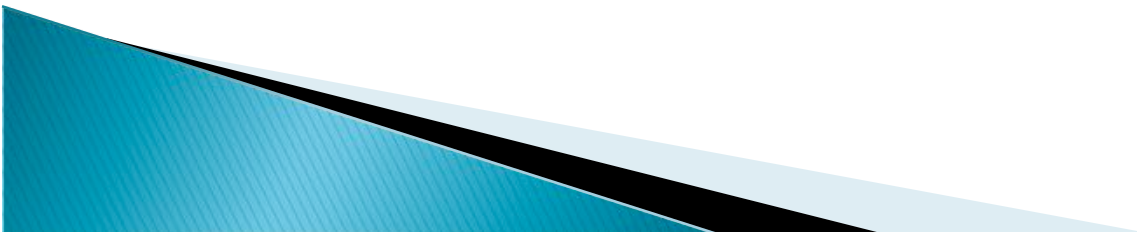


Meaningful Use Dashboards



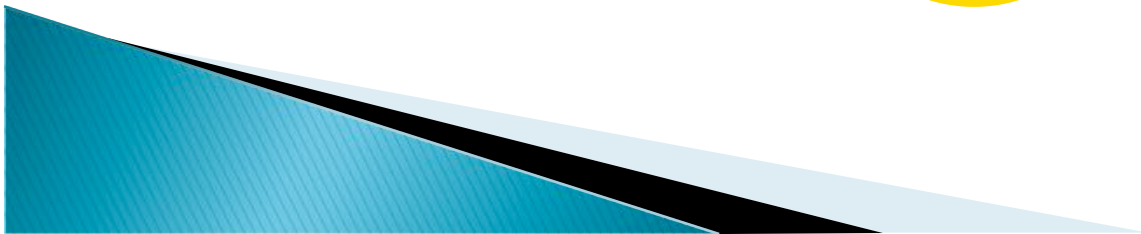
Meaningful Use Clinical Measures

- ▶ Percentage of patients 18–75 years old with diabetes (Type I or II) who had:
 - A1c > 9.0%
(NQF0059 – Diabetes Poor Control)
 - BP < 140/90
(NQF0061 – Diabetes BP Management)
 - LDL-C < 100 mg/dl
(NQF0064 – Diabetes LDL Management)



Upside of MU Data Reporting

- ▶ The clinical measures are easily accessed
- ▶ Can get numerators & denominators
- ▶ Health Centers could “practice” reporting MU CQMs



Downside of MU Data Reporting

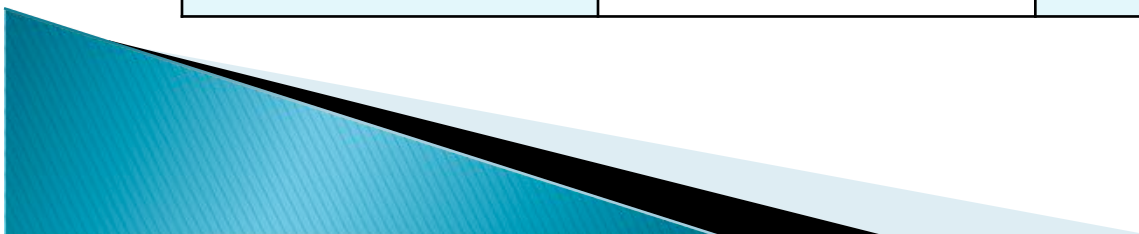
- ▶ One organization did not have 2 of the 3 measures
 - Clinic staff had to pull data from the A1c measure,
 - Requested that the Intermediary Organization send the reports for all three measures.
 - Got very different data for A1c reports



Downside of MU Data Reporting

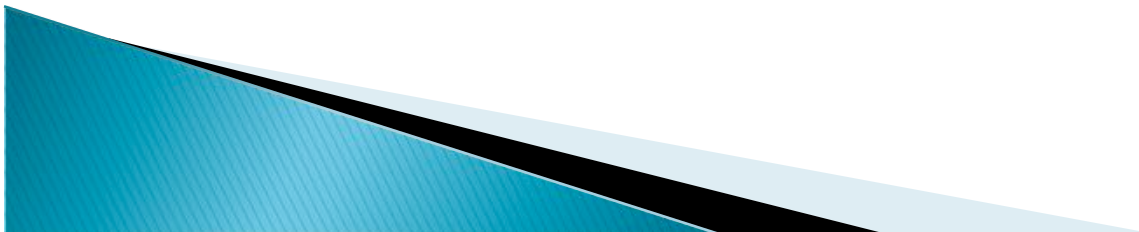
- ▶ The other organization had all 3 measures, but also had almost twice as many patients with diabetes than the previous year.
- ▶ We discovered the data are reported by provider and not by the patient's PCP.

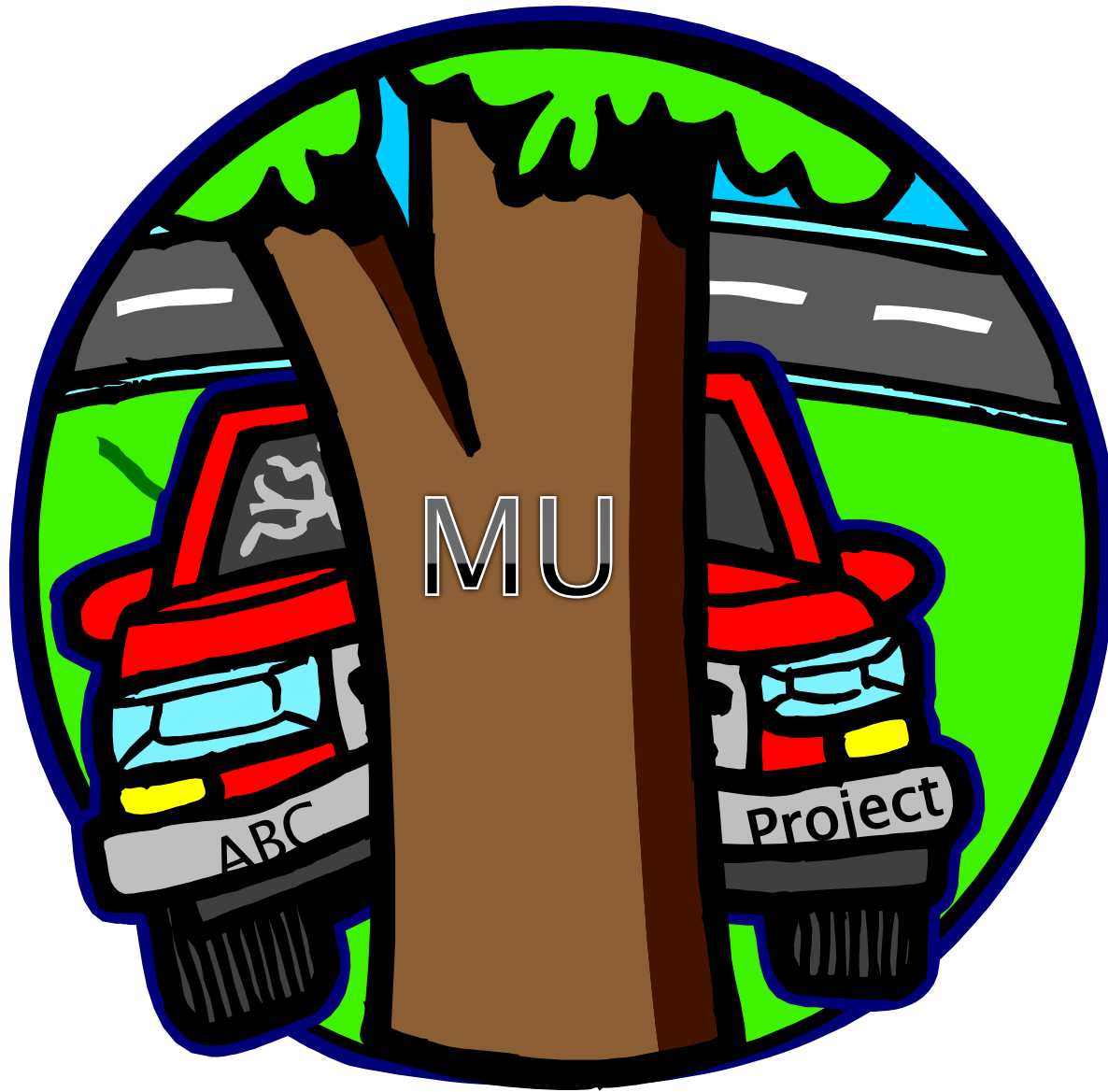
Provider	Date of Service	A1c Result
Provider A (PCP)	May 16	9.8
Provider B	August 20	9.2
Provider A (PCP)	November 21	8.4



Meaningful Use Dashboards

- ▶ DO NOT USE FOR CLINICAL QUALITY REPORTING





Auto Mobile



System Intervention

- ▶ Discovered “flaw” in MU clinical reporting & communicated it to others





Learnings

- ▶ When pulling data from an EHR...
 - Use benchmarks to assess if the data is reasonable
 - If data is missing, do chart checks to assess if information was documented incorrectly or the task wasn't done
 - Look at workflows and documentation habits – retrain staff as needed
 - Give regular feedback to staff on how they are performing
 - Involve staff in making the necessary changes to improve their performance

Comments? Questions?

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