Turning Data into useable information for Performance Improvement

NMPCA Clinical Forum

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Jessica Sanchez Clinical Director, Colorado Community Health Network

Presentation Overview

1. Collecting your data
2. Data Validation Introduction
3. Step-by-Step Guide to Data Validation
4. A Data Validation Tool
5. Presenting your data

"We have lots of information technology. We just don't have any information."

Why We Talk About Data So Much

- Data (should) drive all decisions…
- …but many challenges in collecting clean, accurate data
- You can't change what you can't measure

Correct, meaningful, useful data…

- Enables decision-making based on solid evidence
- Allows you to identify areas for improvement
- Allows dissemination of accurate information
- Strengthens case for securing program funding
- Creates opportunities for change in your clinic

NOT having correct, meaningful, useful data…

- Results in not knowing
  - Where your patients are
  - How your patients are feeling
  - How your patients' health is changing
  - How to support your providers in caring for your patients
- Hampers clinic's ability to make changes

Data Validation…What is it?

- In computer science, data validation is the process of ensuring that a program operates on **clean, correct and useful data**. It uses **routines**, often called validation rules, that check for **correctness or meaningfulness of data** that are input to the system.

(From Wikipedia, http://en.wikipedia.org/wiki/Data_validation)

Data Validation…What is it really?

- Process to ensure that the data you are collecting is:
  - Correct
  - Meaningful
  - Useful
- Essentially: performing analysis to ensure that your data is correct


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HUMAN ERROR. AGAIN.

Not ALL Error is Human…

- Systematic Errors
  - Programming mistakes
  - Bad definitions, rules
  - Sloppy data collection
  - Especially when integrating various data sources
  - Poor training

- Random Errors
  - Data entry mistakes (most mistakes happen here!)
  - Data transcription problems, illegible handwriting
  - Hardware failure
  - Misrepresentation by patient or other

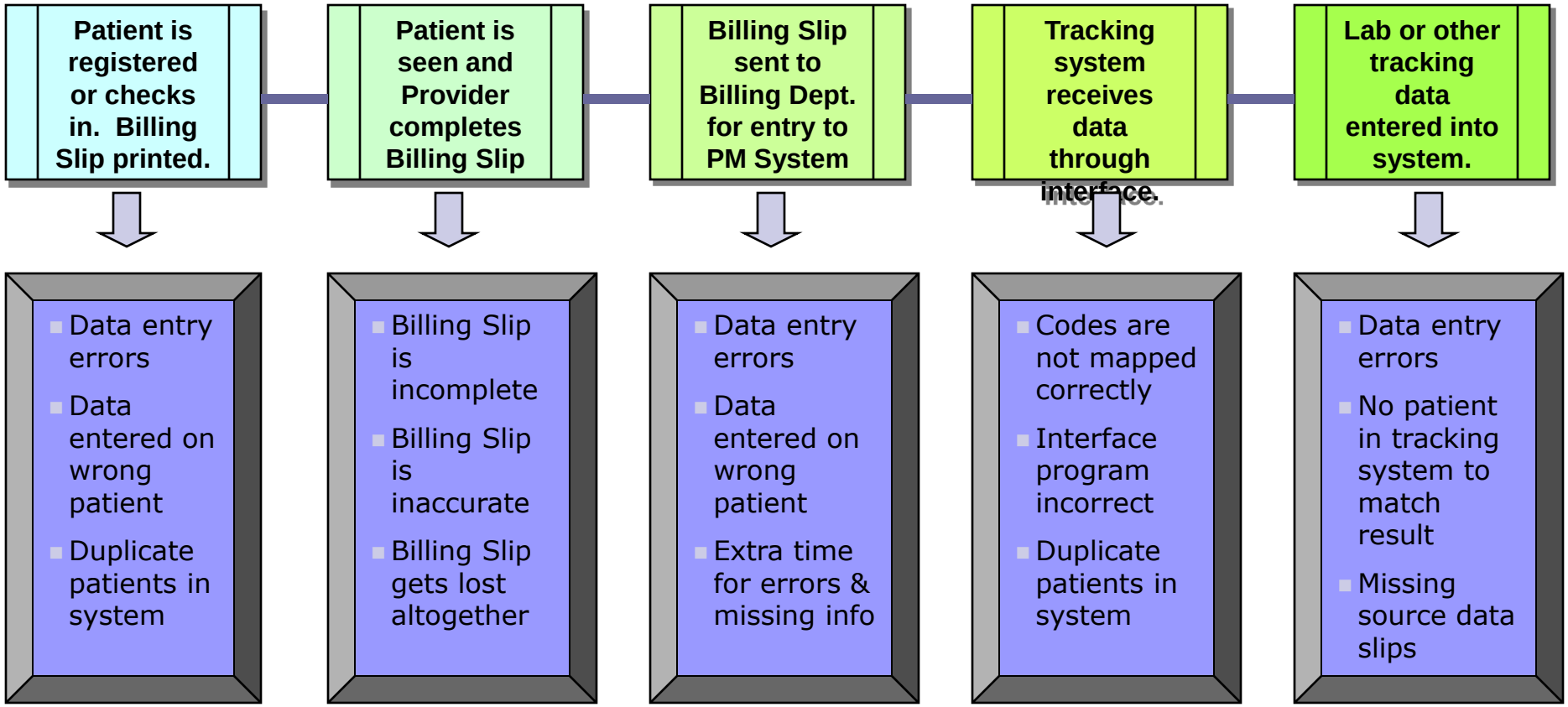
Common Misconceptions about Data Validation

1. Data validation is a luxury

2. Some data is the same as good data
   - Collecting data is just the first step

3. Electronic data doesn’t need to be validated
   - Human and system error can happen anywhere!

Even with Electronic Interfaces: Multiple Points of Failure



Source: CSLC Case Study, "You Can't Make Good Decisions With Bad Data", Data Validation Initiatives at West County Health Centers, April 25, 2007

Getting Started in Data Validation

- What do you want to learn?
- Where is your data?
- Who owns it?
- How will you know it is good data?

What Do You Want to Learn?

- Validation can occur in almost limitless ways, so define your objectives early
- Spectrum of possibilities
  - Validating standard report (i.e. UDS, HDC)
  - Set of clinical measures (for QI)
  - Pay for Performance results
  - Single data element (# of patients with diabetes)

Where is Your Data?

- Sources of data
  - Practice Management Systems
  - Ancillary Systems (Lab, Pharmacy, others)
  - Chronic Disease Registries
  - EMR
  - Medical Charts

Who Owns Your Data

- Front Office
- Billing
- Back Office
- Providers (lab, pharmacy, physicians, PA, NP, Nurses)
- Administration

How Will You Know Your Data is Good?

- Establish acceptable error rate
- Determine how often you will spend chasing down bad data
- Define process for fixing errors
  - It's not enough to identify errors, you need to correct the problem too!

Data Validation Steps

1. Identify what data element (s) needs validation
2. Define goal for that data element
3. Assign data validation to specific person
4. Create timeline for completion, including frequency of validation
5. Determine data sources that contribute to this data element
6. Map out workflow and where, how data elements are touched in clinic
7. Look at results….do they make sense?
8. Identify where errors occurred and fix
9. Re-test data

Step 1: Identify what data element (s) needs validation

- Start small…pick one element to test
- Example: Number of patients with HbA1c test in reporting period

3.11.282-040605		Diabetes Registry Summary Report	From	10/1/2006	Thru	9/30/2007
Clinic = Sample Clinic						
DEMOGRAPHICS			**VISIT INFO**			**TEST/DATA INFO**
1. Patients			**9. Blood Pressure**			**13. HbA1c or Glycosylated Hb**
549	4.85	a. Total registry & Avg	500	91.1%	a. Patients w/bp checked	413	75.2%	a. Patients with test
48	8.7%	b. Pts w/ 0 visits	127	76	b. Avg systolic & Avg diastolic	**7.9**	**413**	**b. Avg HbA1c / n**
1 129	23.5%	c. Pts w/ 1-2 visits	274	54.8%	c. Patients BP >= 130/80	186	2 45.0%	c. < 7.0
159	29.0%	d. Pts w/ 3-5 visits	131	26.2%	d. Patients BP > = 140/90	66	16.0%	d. 7.0 - 7.9
213	38.8%	e. Pts w/ 6+ visits	**226**	**45.2%**	**e. Patients BP < 130/80**	44	10.7%	e. 8.0 - 8.9
2. Sex			**10. Medication**			51	12.3%	f. 9.0 - 9.9
326	59.4%	a. Female	97	17.7%	a. Insulin	66	16.0%	g. >= 10
220	40.1%	b. Male	234	42.6%	b. Sulfonylurea	**179**	**32.6%**	**h. 2+ A1c 91 + days apart**
0	0.0%	c. Other	379	69.0%	c. Biguanide	**14. MicroAL/Creatinine Ratio**		
3	0.5%	d. Unspecified	125	22.8%	d. TZD/Glitazones	279	50.8%	a. Patients with test
3. Age			4	0.7%	e. AG Inhibitor	171	61.3%	b. Normal (<= 30)
0	0.0%	a. Age unspecified	434	79.1%	f. ACE Inhibitors	108	38.7%	c. Abnormal (> 30)
0	0.0%	b. 0 - 14	41	7.5%	g. ARB	**15. Creatinine**		
13	2.4%	c. 15 - 29	459	83.6%	h. ACE or ARB	367	66.8%	a. Patients with test
171	31.1%	d. 30 - 49	370	67.4%	i. Statins	333	90.7%	b. < 1.5
256	46.6%	e. 50 - 64	77	14.0%	j. Beta Blocker	26	7.1%	c. 1.5 - 2.5
107	19.5%	f. 65 - 84	1	0.2%	k. Non DHP-CCB	8	2.2%	d. > 2.5
2	0.4%	g. >= 85	41	7.5%	l. DHP-CCB	**16. ALT**		
536	97.6%	h. >= 30	118	21.5%	m. Diuretic	343	62.5%	a. Patients with test
486	88.5%	i. >= 40	444	80.9%	n. Antiplatelet/Antithrombotic	**17. AST**		
279	50.8%	j. >= 55	401	73.0%	o. Lipid lowerer	335	61.0%	a. Patients with test
4. Race			7	1.3%	p. Other BP	**18. Cholesterol Test**		

Data Elements

- Elements you could test in this single measure:
  - Total number of patients
  - What is an active patient
  - What are correct codes
  - What is accurate reporting period

Step 2: Define Goal for that Data Element

- What is standard, and do you expect to be there?
- Is this the first time you've done this measurement…is this your baseline?
- What is reasonable for your clinic to accomplish, over what time period?

Step 3: Assign to Specific Person

- Person close to data should be doing the validating!
- Needs to have clinical knowledge, familiar with IT, know the workflow
- Enjoy data

Step 4: Create Timeline for Completion

- What is driving this data validation work?
- Is this for a specific project? Ongoing?
- Allow yourself time to repeat validation process several times…and then time to fix any errors you've found

Step 5: Identify Data Sources

Data Element	EMR	Registry
Encounter data (CPT, ICD9)	Electronic interface with PMS	Paper Medical Charts
Lab data	Electronic interface with lab OR Paper Medical Charts	Paper Lab Reports
Vitals (BP, weight, foot/eye exam)	Paper Medical Charts	Paper Medical Charts
Demographics	Electronic interface	Practice Management System

Step 6: Map out Workflow

- Look at current workflow to see how data is being entered into system
- Is the process working?
  - Is the chart or lab report making it to the proper person?
  - When manual entry required, is it done correctly?
- Every step of the way, look at
  - Who is touching data?
  - How is data entering the system?
  - Are errors being corrected?
- Each step in workflow can result in data errors!

A Cautionary Tale...

"I knew the woodpeckers were a mistake."

Establish Workflow Process

- Importance of establishing and following workflow process for data input and reporting cannot be overstated!
- Even “Yes” and “No” steps can be easily overlooked
- Bad data wastes resources (staff time) and leads, ultimately, to delay in patient care

Step 7: Look at Results

- Data validation is like being a detective…follow your instincts!
- Same principles no matter what the system
  - Does the data make sense?
  - Is there a common error/problem popping up?
  - What is the source of that problem?

1.282-0406

Diabetes Registry Summary Report

From 10/1/2006 Thru 9/30/2007

All Clinics and Providers

DEMOGRAPHICS

1. Patients

105	3.25	a. Total registry & Avg
4	3.8%	b. Pts w/ 0 visits
53	50.5%	c. Pts w/ 1-2 visits
29	27.6%	d. Pts w/ 3-5 visits
19	18.1%	e. Pts w/ 6+ visits

2. Sex

57	54.3%	a. Female
48	45.7%	b. Male
0	0.0%	c. Other
0	0.0%	d. Unspecified

3. Age

0	0.0%	a. Age unspecified
0	0.0%	b. 0 - 14
2	1.9%	c. 15 - 29
22	21.0%	d. 30 - 49
46	43.8%	e. 50 - 64
35	33.3%	f. 65 - 84
0	0.0%	g. >= 85
103	98.1%	h. >= 30
94	89.5%	i. >= 40
66	62.9%	j. >= 55

4. Race

44	41.9%	a. Caucasian
10	9.5%	b. African American
0	0.0%	c. American Indian
2	1.9%	d. Asian
49	46.7%	e. Hispanic
0	0.0%	f. Pacific Islander
0	0.0%	g. Other
0	0.0%	h. Race unspecified

5. Insurance

102	97.1%	a. Insurance indicated
6	5.9%	b. Private Ins
3	2.9%	c. Medicaid
17	16.7%	d. Medicare
2	2.0%	e. Medicaid + Medicare
4	3.9%	f. Medicare + Private
1	1.0%	g. CHAMPUS/TRICARE
0	0.0%	h. Catastrophic Only
1	1.0%	i. CHIP
41	40.2%	j. Other

VISIT INFO

9. Blood Pressure

100	95.2%	a. Patients w/ bp checked
131	78	b. Avg systolic & Avg diastolic
66	66.0%	c. Patients BP >= 130/80
37	37.0%	d. Patients BP >= 140/90
34	**34.0%**	**e. Patients BP < 130/80**

10. Medications

31	29.5%	a. Insulin
50	47.6%	b. Sulfonylurea
54	51.4%	c. Biguanide
22	21.0%	d. TZD/Glitazones
0	0.0%	e. AG Inhibitor
66	62.9%	f. ACE Inhibitors
8	7.6%	g. ARB
74	70.5%	h. ACE or ARB
62	59.0%	i. Statins
13	12.4%	j. Beta Blocker
1	1.0%	k. Non DHP-CCB
5	4.8%	l. DHP-CCB
20	19.0%	m. Diuretic
62	59.0%	n. Antiplatelet/Antithrombotic
63	60.0%	o. Lipid lowerer
4	3.8%	p. Other BP
57	**60.6%**	**q. Antiplat/Antithrom (>= 40)**
49	**74.2%**	**r. ACE or ARB (age >= 55)**
58	**61.7%**	**s. Statins (age >= 40)**
29	32.2%	t. 12-70, not on ACE or ARB

11. Health Profile

71	67.6%	a. Hypertension
65	61.9%	b. Dyslipidemia
1	1.0%	c. CerebroVDz
0	0.0%	d. PVD
14	13.3%	e. CAD
9	8.6%	f. Nephropathy
1	1.0%	g. Microalbuminuria
4	3.8%	h. Retinopathy
6	5.7%	i. Neuropathy
18	17.1%	j. Depression
30	28.6%	k. Self Monitor BG
5	4.8%	l. Physical Activity Doc'ed
5	*100.0*	*m. Physical Activity (>= 3/wk)*
0	0.0%	n. Smoking Status Doc'ed

TEST/DATA INFO

13. HbAlc or Glycosylates Hb

85	81.0%	a. Patients with test
7.7	**85**	**b. Average HbAlc / n**
39	45.9%	c. < 7.0
14	16.5%	d. 7.0 - 7.9
11	12.9%	e. 8.0 - 8.9
11	12.9%	f. 9.0 - 9.9
10	11.8%	g. >= 10
40	**38.1%**	**h. 2+ Alc 91 + days apart**

14. MicroAL/Creatinine Ratio

46	43.8%	a. Patients with test
28	60.9%	b. Normal (<= 30)
16	34.8%	c. Abnormal (> 30)

15. Creatinine

87	82.9%	a. Patients with test
83	95.4%	b. < 1.5
4	4.6%	c. 1.5 - 2.5
0	0.0%	d. > 2.5

16. ALT

80	76.2%	a. Patients with test

17. AST

19	18.1%	a. Patients with test

18. Cholesterol Test

86	81.9%	a. Patients with test
200.5	86	b. Average Cholesterol / n
41	47.7%	c. Patients >= 200

19. Triglycerides Test

86	81.9%	a. Patients with test
237.3	86	b. Average Triglyceride / n
38	44.2%	c. Patients >= 200

20. HDL Test

86	81.9%	a. Patients with test
46.3	86	b. Average HDL / n
46	53.5%	c. Patients < 45

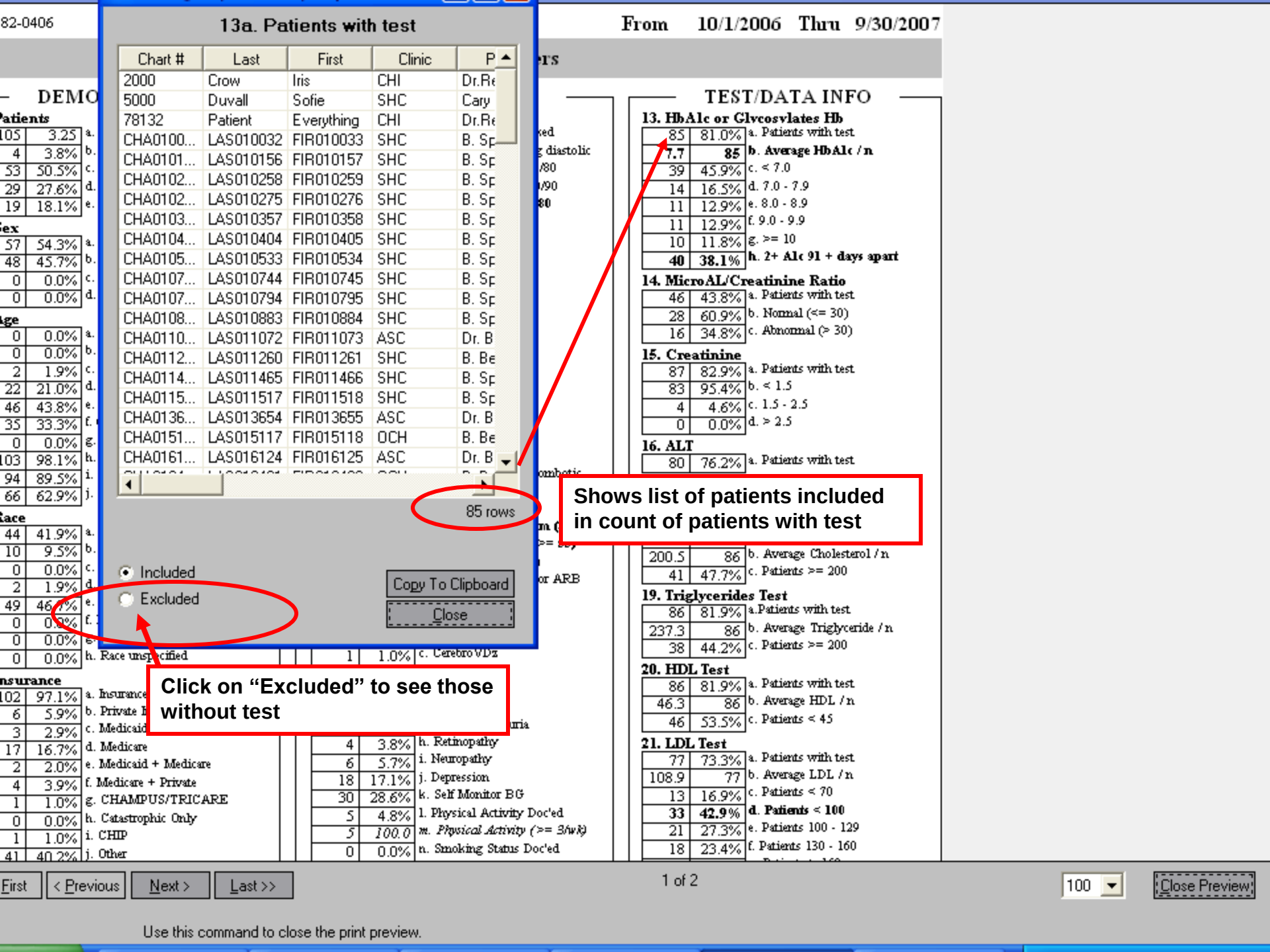
21. LDL Test

77	73.3%	a. Patients with test
108.9	77	b. Average LDL / n
13	16.9%	c. Patients < 70
33	**42.9%**	**d. Patients < 100**
21	27.3%	e. Patients 100 - 129
18	23.4%	f. Patients 130 - 160

Drill-down into measurement to see patient information

Example:

Following the Data Trail (PECS)


82-0406
From 10/1/2006 Thru 9/30/2007
13a. Patients with test
Chart # | Last | First | Clinic | P
2000 | Crow | Iris | CHI | Dr.Re
5000 | Duvall | Sofie | SHC | Cary
78132 | Patient | Everything | CHI | Dr.Re
CHA0100... | LAS010032 | FIR010033 | SHC | B. Sp
CHA0101... | LAS010156 | FIR010157 | SHC | B. Sp
CHA0102... | LAS010258 | FIR010259 | SHC | B. Sp
CHA0102... | LAS010275 | FIR010276 | SHC | B. Sp
CHA0103... | LAS010357 | FIR010358 | SHC | B. Sp
CHA0104... | LAS010404 | FIR010405 | SHC | B. Sp
CHA0105... | LAS010533 | FIR010534 | SHC | B. Sp
CHA0107... | LAS010744 | FIR010745 | SHC | B. Sp
CHA0107... | LAS010794 | FIR010795 | SHC | B. Sp
CHA0108... | LAS010883 | FIR010884 | SHC | B. Sp
CHA0110... | LAS011072 | FIR011073 | ASC | Dr. B
CHA0112... | LAS011260 | FIR011261 | SHC | B. Be
CHA0114... | LAS011465 | FIR011466 | SHC | B. Sp
CHA0115... | LAS011517 | FIR011518 | SHC | B. Sp
CHA0136... | LAS013654 | FIR013655 | ASC | Dr. B
CHA0151... | LAS015117 | FIR015118 | OCH | B. Be
CHA0161... | LAS016124 | FIR016125 | ASC | Dr. B
85 rows
Included
Excluded
Copy To Clipboard
Close
Shows list of patients included in count of patients with test
Click on "Excluded" to see those without test
TEST/DATA INFO
13. HbAlc or Glycosylates Hb
85 81.0% a. Patients with test
7.7 85 b. Average HbAlc / n
39 45.9% c. < 7.0
14 16.5% d. 7.0 - 7.9
11 12.9% e. 8.0 - 8.9
11 12.9% f. 9.0 - 9.9
10 11.8% g. >= 10
40 38.1% h. 2+ Alc 91 + days apart
14. MicroAL/Creatinine Ratio
46 43.8% a. Patients with test
28 60.9% b. Normal (<= 30)
16 34.8% c. Abnormal (> 30)
15. Creatinine
87 82.9% a. Patients with test
83 95.4% b. < 1.5
4 4.6% c. 1.5 - 2.5
0 0.0% d. > 2.5
16. ALT
80 76.2% a. Patients with test
200.5 86 b. Average Cholesterol / n
41 47.7% c. Patients >= 200
19. Triglycerides Test
86 81.9% a.Patients with test
237.3 86 b. Average Triglyceride / n
38 44.2% c. Patients >= 200
20. HDL Test
86 81.9% a. Patients with test
46.3 86 b. Average HDL / n
46 53.5% c. Patients < 45
21. LDL Test
77 73.3% a. Patients with test
108.9 77 b. Average LDL / n
13 16.9% c. Patients < 70
33 42.9% d. Patients < 100
21 27.3% e. Patients 100 - 129
18 23.4% f. Patients 130 - 160
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Close Preview
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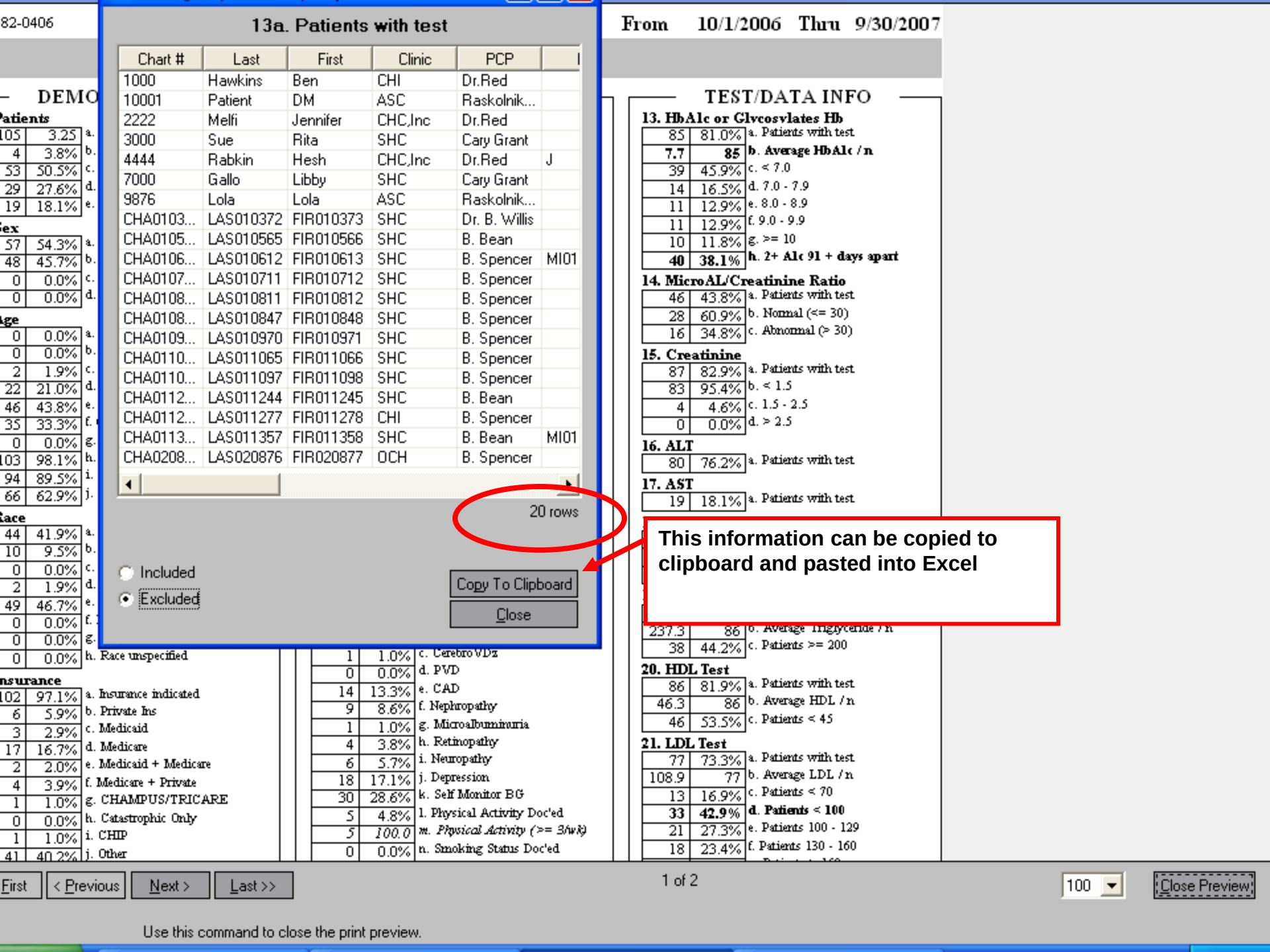
82-0406
From 10/1/2006 Thru 9/30/2007
13a. Patients with test
Chart # | Last | First | Clinic | PCP
1000 | Hawkins | Ben | CHI | Dr.Red
10001 | Patient | DM | ASC | Raskolnik...
2222 | Melfi | Jennifer | CHC,Inc | Dr.Red
3000 | Sue | Rita | SHC | Cary Grant
4444 | Rabkin | Hesh | CHC,Inc | Dr.Red
7000 | Gallo | Libby | SHC | Cary Grant
9876 | Lola | Lola | ASC | Raskolnik...
CHA0103... | LAS010372 | FIR010373 | SHC | Dr. B. Willis
CHA0105... | LAS010565 | FIR010566 | SHC | B. Bean
CHA0106... | LAS010612 | FIR010613 | SHC | B. Spencer | MI01
CHA0107... | LAS010711 | FIR010712 | SHC | B. Spencer
CHA0108... | LAS010811 | FIR010812 | SHC | B. Spencer
CHA0108... | LAS010847 | FIR010848 | SHC | B. Spencer
CHA0109... | LAS010970 | FIR010971 | SHC | B. Spencer
CHA0110... | LAS011065 | FIR011066 | SHC | B. Spencer
CHA0110... | LAS011097 | FIR011098 | SHC | B. Spencer
CHA0112... | LAS011244 | FIR011245 | SHC | B. Bean
CHA0112... | LAS011277 | FIR011278 | CHI | B. Spencer
CHA0113... | LAS011357 | FIR011358 | SHC | B. Bean | MI01
CHA0208... | LAS020876 | FIR020877 | OCH | B. Spencer
20 rows
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Excluded
Copy To Clipboard
Close
This information can be copied to clipboard and pasted into Excel
TEST/DATA INFO
13. HbAlc or Glycosylates Hb
85 | 81.0% | a. Patients with test
7.7 | 85 | b. Average HbAlc / n
39 | 45.9% | c. < 7.0
14 | 16.5% | d. 7.0 - 7.9
11 | 12.9% | e. 8.0 - 8.9
11 | 12.9% | f. 9.0 - 9.9
10 | 11.8% | g. >= 10
40 | 38.1% | h. 2+ Alc 91 + days apart
14. MicroAL/Creatinine Ratio
46 | 43.8% | a. Patients with test
28 | 60.9% | b. Normal (<= 30)
16 | 34.8% | c. Abnormal (> 30)
15. Creatinine
87 | 82.9% | a. Patients with test
83 | 95.4% | b. < 1.5
4 | 4.6% | c. 1.5 - 2.5
0 | 0.0% | d. > 2.5
16. ALT
80 | 76.2% | a. Patients with test
17. AST
19 | 18.1% | a. Patients with test
20. HDL Test
86 | 81.9% | a. Patients with test
46.3 | 86 | b. Average HDL / n
46 | 53.5% | c. Patients < 45
21. LDL Test
77 | 73.3% | a. Patients with test
108.9 | 77 | b. Average LDL / n
13 | 16.9% | c. Patients < 70
33 | 42.9% | d. Patients < 100
21 | 27.3% | e. Patients 100 - 129
18 | 23.4% | f. Patients 130 - 160
DEMO
Patients
105 | 3.25 | a.
4 | 3.8% | b.
53 | 50.5% | c.
29 | 27.6% | d.
19 | 18.1% | e.
Sex
57 | 54.3% | a.
48 | 45.7% | b.
0 | 0.0% | c.
0 | 0.0% | d.
Age
0 | 0.0% | a.
0 | 0.0% | b.
2 | 1.9% | c.
22 | 21.0% | d.
46 | 43.8% | e.
35 | 33.3% | f.
0 | 0.0% | g.
103 | 98.1% | h.
94 | 89.5% | i.
66 | 62.9% | j.
Race
44 | 41.9% | a.
10 | 9.5% | b.
0 | 0.0% | c.
2 | 1.9% | d.
49 | 46.7% | e.
0 | 0.0% | f.
0 | 0.0% | g.
0 | 0.0% | h. Race unspecified
Insurance
102 | 97.1% | a. Insurance indicated
6 | 5.9% | b. Private Ins
3 | 2.9% | c. Medicaid
17 | 16.7% | d. Medicare
2 | 2.0% | e. Medicaid + Medicare
4 | 3.9% | f. Medicare + Private
1 | 1.0% | g. CHAMPUS/TRICARE
0 | 0.0% | h. Catastrophic Only
1 | 1.0% | i. CHIP
41 | 40.2% | j. Other
1 | 1.0% | c. CerebroVDz
0 | 0.0% | d. PVD
14 | 13.3% | e. CAD
9 | 8.6% | f. Nephropathy
1 | 1.0% | g. Microalbuminuria
4 | 3.8% | h. Retinopathy
6 | 5.7% | i. Neuropathy
18 | 17.1% | j. Depression
30 | 28.6% | k. Self Monitor BG
5 | 4.8% | l. Physical Activity Doc'ed
5 | 100.0 | m. Physical Activity (>= 3/wk)
0 | 0.0% | n. Smoking Status Doc'ed
237.3 | 86 | b. Average Triglyceride / n
38 | 44.2% | c. Patients >= 200
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Close Preview
Use this command to close the print preview.

File Edit View Insert Format Tools Data Window Help

Type a question for help

Arial 10 B I U $ % ,

Reply with Changes... End Review...

Print Risk & Cost Changes | Print HbA1C Graph | Print TC Graph | Print SBP Graph | Print Assumptions

D28

First	Clinic	PCP	MI	Address	Address 2	City	State	Zip	Phone #	Last Encounter Date	Last Enco	HbA1c
Ben	CHI	Dr.Red		1 One St		New Haver	CT	6513		11/3/2006	Office	
DM	ASC	Raskolnikov								6/14/2006 1:00	Import	
Jennifer	CHC,Inc	Dr.Red		1234 park street		sacrement	CA	12345	(563) 123-1	6/10/2007	Office	
Rita	SHC	Cary Grant		5 Thunder Way		New Haver	CT	6513		6/12/2006	Office	
Hesh	CHC,Inc	Dr.Red	J	1111 sixth street		sacrement	CA	11234	(563) 456-7	5/15/2007 12:00	Office	
Libby	SHC	Cary Grant		3 Five Row		New Haver	CT	6513		9/10/2006	Office	
Lola	ASC	Raskolnikov		1047 Adams St.		Denver	CO	80206	303-555-11	4/25/2007	Office	
FIR010373	SHC	Dr. B. Willis		ADD010374		CIT010360	UT	ZIP010362	PHO01037	9/14/2007	Office	
FIR010566	SHC	B. Bean		ADD010567		CIT010553	UT	ZIP010555	PHO01056	6/9/2007	Office	
FIR010613	SHC	B. Spencer	MI010614	ADD010615		CIT010600	UT	ZIP010602	PHO01061	3/31/2007	Office	
FIR010712	SHC	B. Spencer		ADD010713		CIT010700	UT	ZIP010702	PHO01071	5/12/2007	Office	
FIR010812	SHC	B. Spencer		ADD							Office	
FIR010848	SHC	B. Spencer		ADD							Office	
FIR010971	SHC	B. Spencer		ADD							Office	
FIR011066	SHC	B. Spencer		ADD							Office	
FIR011098	SHC	B. Spencer		ADD							Office	
FIR011245	SHC	B. Bean		ADD							Office	
FIR011278	CHI	B. Spencer		ADD							Office	
FIR011358	SHC	B. Bean	MI011359	ADD							Office	
FIR020877	OCH	B. Spencer		ADD							Office	

No matter the system you are using, you can validate multiple data elements:

- **Including: patient chart #, name, address, PCP, last visit date, last HbA1c date, etc.**
- **Reality check: does it look right/wrong?**
- **If further research needed, use list to pull charts**

Sheet1 Sheet2 Sheet3

AutoShapes

NUM

Chart Audits...How Many, How Often?

- Validation does not mean testing EVERY piece of relevant data; resources usually don’t allow for 100% testing
- Calculating sample sizes
  - HRSA Guidelines
  - Clinic standards

Calculating Sample Sizes

- Sample size:
  - With a fully functional EHR – all patients that meet the criteria at all sites
  - Without EHR – a sample of 70 randomly selected records (or all qualifying records if less than 70)
- Random sample requires:
  - A sampling routine in the software
  - A report which lists all qualifying patients /chart #s

(Source: “PCA Support for Health Care and Business Plans in the 2009 BPR and SAC”, January 2008, HRSA/BPHC)

A Sample Chart Audit Tool

Diabetic Patient Audit					
	Total	# Inactive			
All Diabetic Patients with 2 encounters					
Chart Audit					
	# With Correct Diagnosis	# With 2+ Documented Visits	# With Documented Lab Tests Requested	# With Lab Results in Chart	# Inactive
Diabetic Patients Being Tracked					
Diabetic Patients Not Tracked					
PAP Audit					
	Total	# Inactive			
All Female Patients (age 21-64)					
Chart Audit					
	# With 2+ Documented Visits	# With Documented Mammo Requested	# With Mammo Results in Chart	# Inactive	
PAP Patients Being Tracked					
PAP Patients Not Being Tracked					
Mammography Audit					
	Total	# Inactive			
All Female Patients (age 42-64)					
Chart Audit					
	# With 2+ Documented Visits	# With Documented Lab Tests Requested	# With Lab Results in Chart	# Inactive	
Mamm Patients Being Tracked					
Mamm Patients Not Being Tracked					

Step 8: Identify where Errors Occurred

- Coding errors?
  - If patient not coded correctly, will never get to your registry
- Duplicate Patients?
  - Is there a unique patient identifier, and is it being used?
- Deceased/inactive?
  - Need process for de-activating patients

Step 9: Re-Test Data

- Fix the problem first….may take several tries!
  - May require education, communication across your clinic
  - Will probably involve numerous providers/staff
- Give yourself time to resolve the problem
  - It took awhile to make the mess, give yourself time to clean it up!

Lessons Learned

1. Get it right from the start! Do whatever it takes to make sure the data goes into the system correctly.
2. Data validation and maintaining data integrity is a constant process, not just a one-time project.
3. Make sure someone owns the responsibility for data stewardship, supported by the leaders of the organization.
4. It's critical to understand the sources of information for each data element, and to conduct controlled testing.

Source: CSLC Case Study, "You Can't Make Good Decisions With Bad Data", Data Validation Initiatives at West County Health Centers, April 25, 2007

Sharing Your Data

- Accreditation
- Funders
- Community
- Others

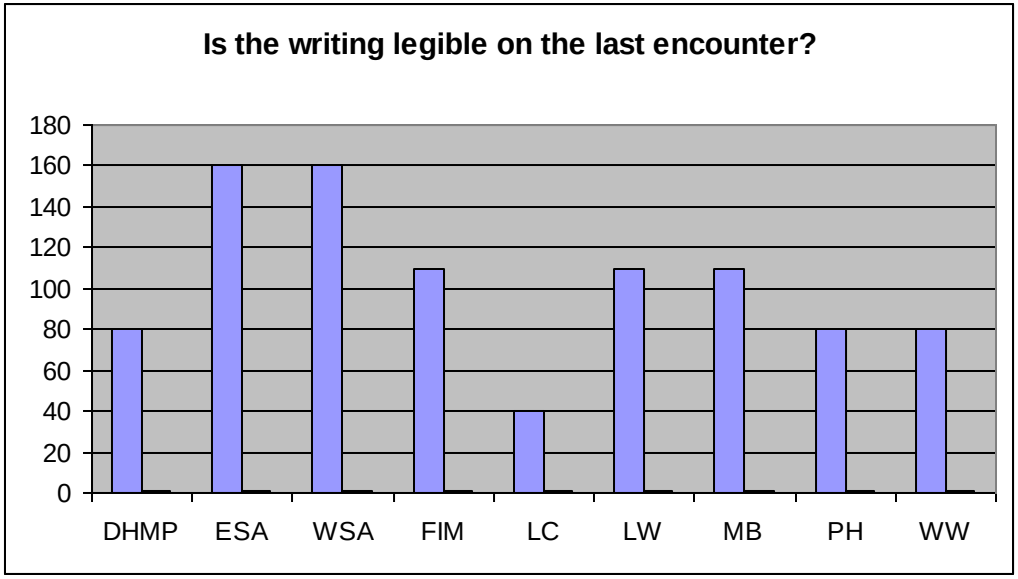
Examples: IZ rates

Immunizations	La Casa	
Indicator	**N**	**% Up to Date**
4-3-1-3-3-1-4 @ 24 months	265	77%
3-2-2-2 @ 12 months	237	92%

Immunizations	Lowry	
Indicator	**N**	**% Up to Date**
4-3-1-3-3-1-4 @ 24 months	241	76%
3-2-2-2 @ 12 months	215	88%

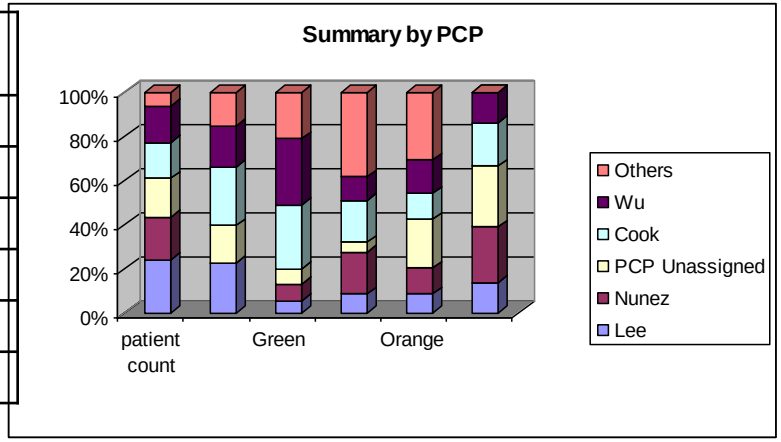
Immunizations	Montbello	
Indicator	**N**	**% Up to Date**
4-3-1-3-3-1-4 @ 24 months	236	70%
3-2-2-2 @ 12 months	231	84%

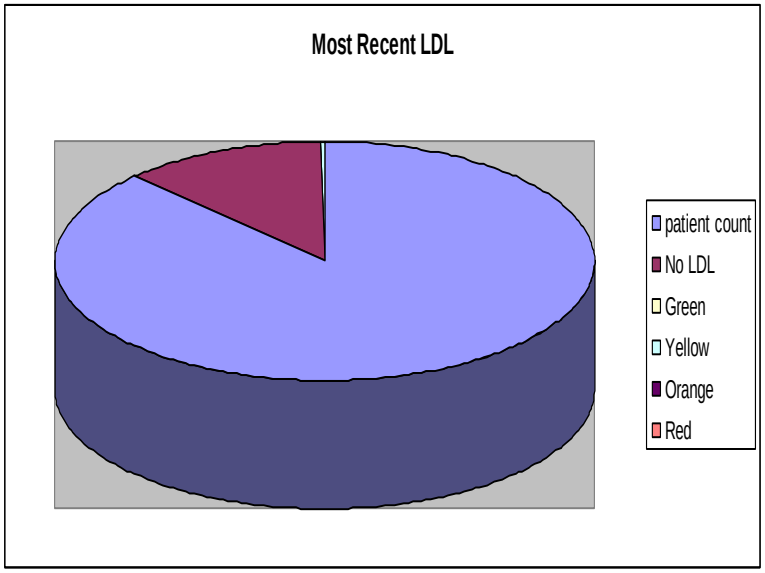
Immunizations	Parkhill	
Indicator	**N**	**% Up to Date**
4-3-1-3-3-1-4 @ 24 months	123	80%
3-2-2-2 @ 12 months	134	87%

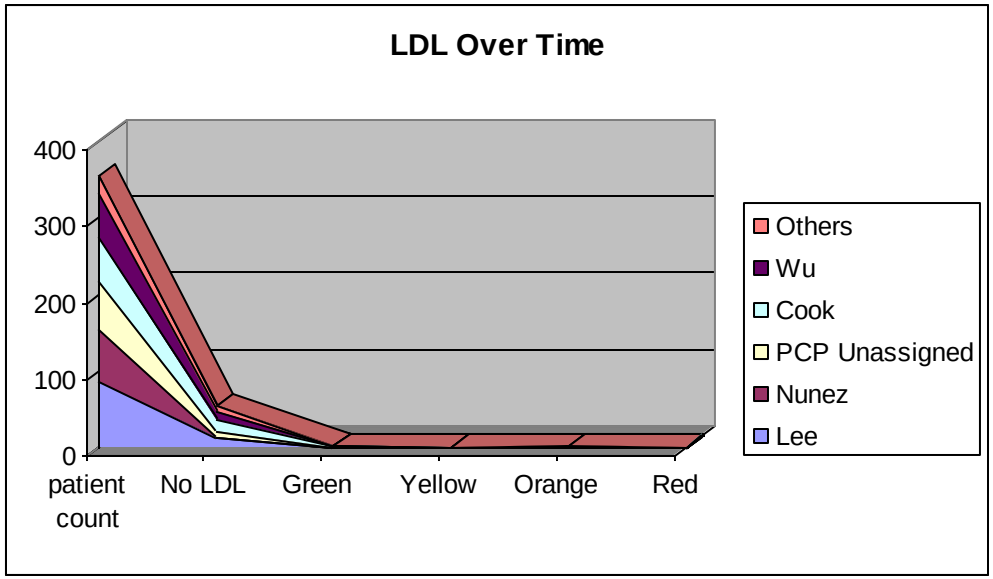


Raw Data	DHMP	ESA	WSA	FIM	LC	LW	MB	PH	WW
Number of charts included in Audit	80	160	160	110	40	110	110	80	80
Is the writing legible for the last encounter?	91%	76%	56%	72%	70%	98%	95%	64%	95%

PCP Name	patient count	No LDL	Green	Yellow	Orange	Red
Lee	85	12	12%	4%	5%	5%
Nunez	68	11%	16%	9%	7%	9%
PCP Unassigned	62	9	15%	2%	13%	10%
Cook	58	14	62%	9%	7%	7%
Wu	58	10	64%	5%	9%	5%
Others	22	8	45%	18%	18%	0%







Questions?

Contact Information

Jessica Sanchez

jessica@cchn.org

303-861-5165 X231