



TO: HCHS/SOL Quality Control Committee

FROM: Daniela Sotres-Alvarez, HCHS/SOL Coordinating Center

DATE: March 29, 2011

RE: HCHS/SOL Quality Control Report, March 2011

MEMORANDUM

Attached is the HCHS/SOL Quality Control Report produced during the month of March, 2011. We cut-off the inclusion of examination visit data used in this report on March 16th when the SAS analysis files were created. In particular we include the following tables and figures:

Table 3.2c Reliability of fasting glucose and insulin (Tube 4 & 5)

Table 3.2d Reliability of post OGTT glucose and insulin (Tube 10)

Table 3.6a Digit Preference Analysis, by Field Center

Plot Digit Preference Score for SPB, by Field Center

Plot Frequency of Terminating Digit for Ankle-Brachial SBP, by Field Center

Table 5.0 Fasting glucose value higher than post-OGTT glucose

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Table 3.2c Reliability of laboratory measurements (Tube 4 & 5)

		QC Pairs					Difference					
		N	Outliers removed	Mean	Lab SD (1)	Reliab (2)	CV (3)	Mean	95% CI	Prop > 0	pval (4)	
Glucose, fasting (mg/dL) (LABA70)	Bronx	262	3	103.2	2.72	0.99	2.6	-1.25	-2.01	-0.49	0.32	0.000
	Chicago	138	3	109.0	3.16	0.99	2.9	-0.30	-1.68	1.08	0.39	0.105
	Miami	193	4	103.4	3.29	0.99	3.2	-1.24	-2.44	-0.04	0.26	0.000
	San Diego	154	3	104.4	2.75	0.99	2.6	-0.08	-0.81	0.65	0.45	0.687
	Overall	747	4	104.6	2.97	0.99	2.8	-0.83	-1.34	-0.32	0.34	0.000
Insulin, fasting (converted to mU/L)	Bronx	240	4	12.6	1.50	0.97	11.9	-0.15	-0.72	0.41	0.49	0.651
	Chicago	125	7	12.9	1.28	0.98	10.0	-0.03	-0.52	0.46	0.50	0.592
	Miami	185	2	15.4	1.80	0.97	11.7	0.21	-0.27	0.69	0.51	0.883
	San Diego	149	4	13.4	1.75	0.98	13.1	0.74	0.15	1.32	0.58	0.021
	Overall	699	7	13.6	1.60	0.98	11.8	0.15	-0.12	0.43	0.52	0.290

Outliers (diff > 3 SD) excluded unless row label is preceded by *

(1) Standard deviation = square root (within-subject variance)

(2) The reliability coefficient is an estimate of the correlation between repeated measurements

(3) The coefficient of variation (CV) is the lab SD expressed as a percent of the mean of QC pairs

(4) P-value for test that the proportion of positive differences = 50% (test for systematic bias)

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Table 3.2d Reliability of laboratory measurements (Tube 10)

		QC Pairs		Mean	Lab SD (1)	Reliab (2)	CV (3)	Difference			pval (4)	
	N	Outliers removed	Mean					Mean	95% CI	Prop > 0		
Glucose, post OGTT (mg/dL) (LABA71)	Bronx	298	4	123.2	2.96	1.00	2.4	0.05	-0.57	0.67	0.51	1.000
	Chicago	188	6	117.8	3.77	0.99	3.2	-1.27	-3.16	0.63	0.44	0.422
	Miami	221	3	126.9	3.97	0.99	3.1	0.13	-1.52	1.78	0.51	0.788
	San Diego	184	4	117.3	4.38	0.99	3.7	-3.38	-7.45	0.70	0.58	0.015
	Overall	891	6	121.8	3.72	0.99	3.1	-0.92	-1.96	0.12	0.51	0.384
Insulin, post OGTT (converted to mU/L)	Bronx	201	6	81.1	5.09	1.00	6.3	0.50	-0.90	1.91	0.53	0.778
	Chicago	139	4	86.6	7.47	0.99	8.6	-1.62	-7.37	4.13	0.42	0.175
	Miami	189	1	93.7	12.36	0.98	13.2	-1.27	-5.44	2.90	0.53	0.467
	San Diego	181	5	83.1	6.74	0.99	8.1	-3.43	-6.14	-0.72	0.43	0.552
	Overall	710	6	86.0	8.35	0.99	9.7	-1.39	-3.15	0.38	0.48	0.736

Outliers (diff > 3 SD) excluded unless row label is preceded by *

(1) Standard deviation = square root (within-subject variance)

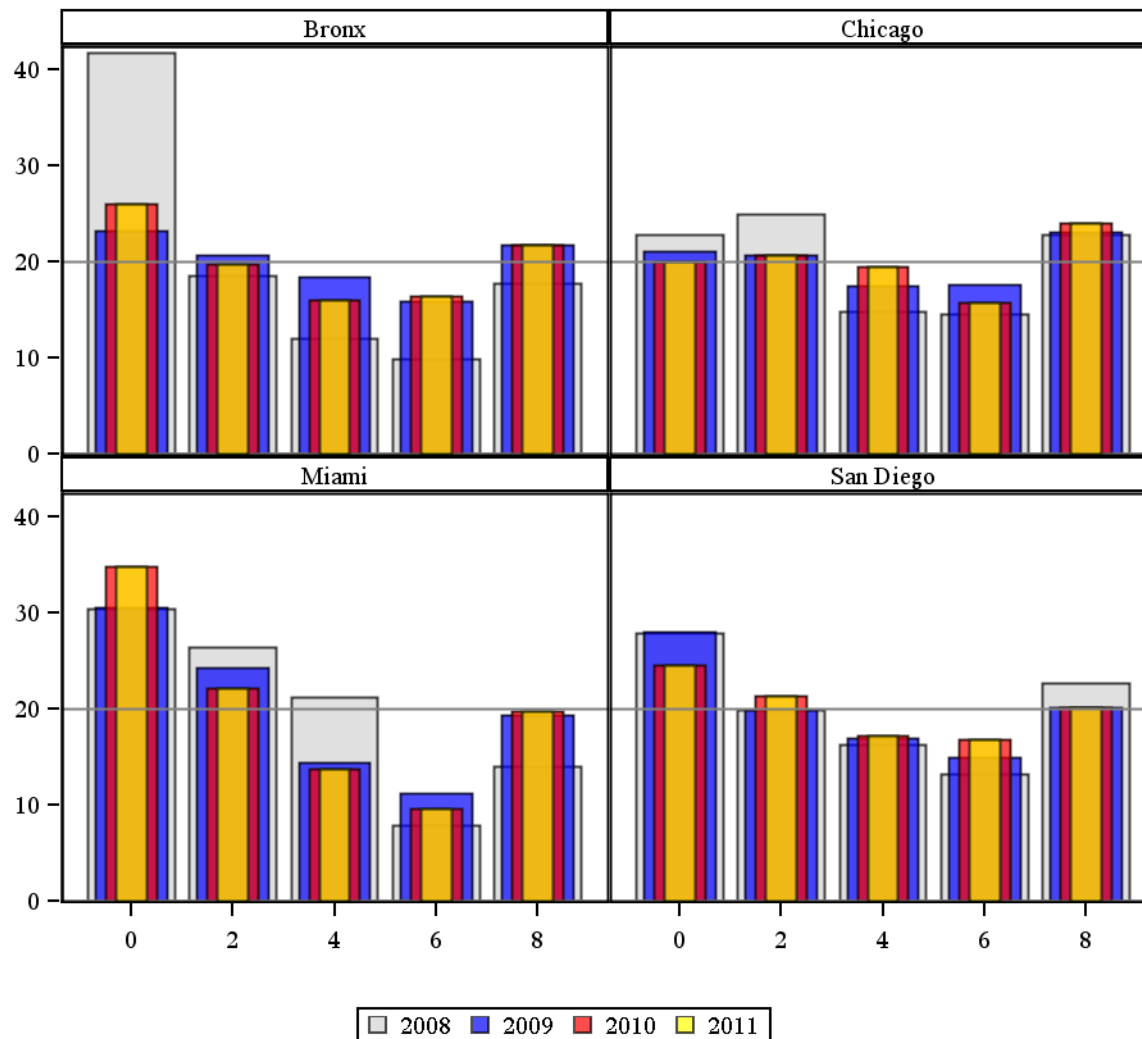
(2) The reliability coefficient is an estimate of the correlation between repeated measurements

(3) The coefficient of variation (CV) is the lab SD expressed as a percent of the mean of QC pairs

(4) P-value for test that the proportion of positive differences = 50% (test for systematic bias)

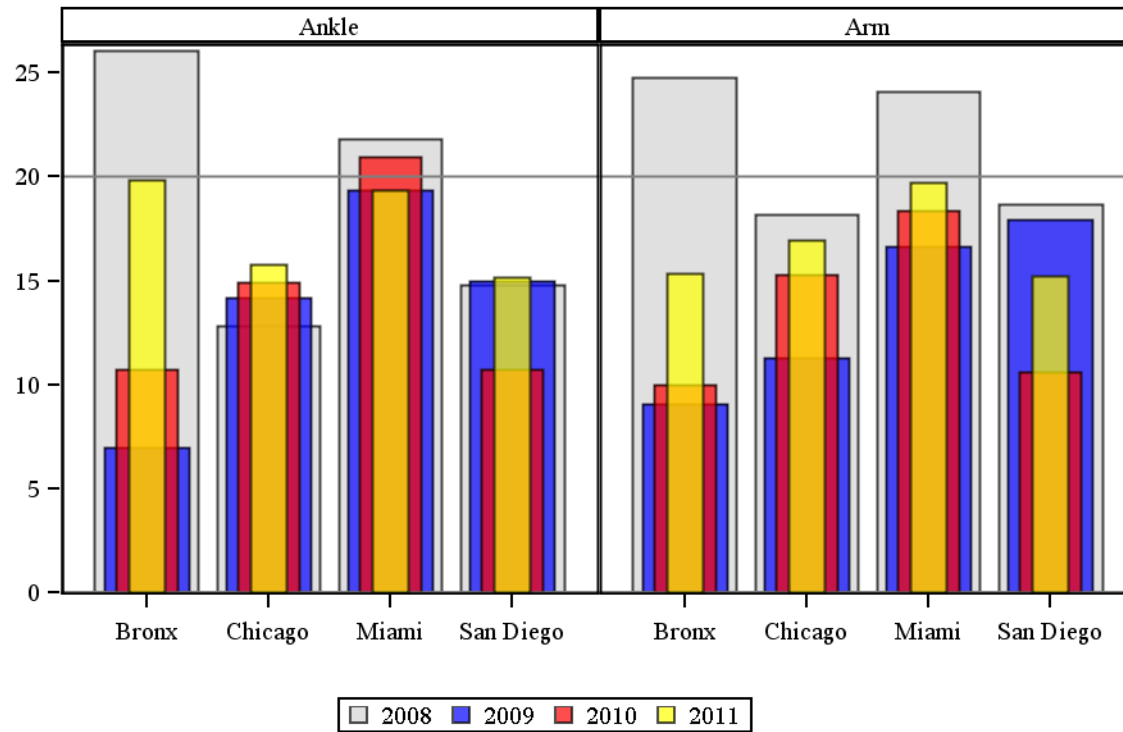
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 Frequency of Terminating Digit for Ankle-Brachial Pressures



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 Average Digit Preference Score for SBP by Site



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Table 3.6a Digit Preference Analysis, by Field Center
(results exclude staff that are no longer performing measurements)

			No. obs	No. possible final digits	Least freq digit (%)	Most freq digit (%)	Chi-Square for GOF test	P-value for Chi-Square	Digit preference score (DPS)	*Strong evidence of digit preference
<i>Year</i>										
<i>Bronx</i>	<i>Ankle SBP</i>	<i>2008</i>	435	5	10	42	164.0	0.0000	26.1	1
		<i>2009</i>	656	5	16	24	16.9	0.0467	7.0	0
		<i>2010</i>	619	5	12	29	35.5	0.1698	10.7	0
		<i>2011</i>	144	5	10	35	19.9	0.0398	19.8	0
	<i>Arm SBP</i>	<i>2008</i>	219	5	10	40	69.8	0.0000	24.8	1
		<i>2009</i>	328	5	14	26	14.2	0.0521	9.1	0
		<i>2010</i>	309	5	11	31	18.1	0.2151	10.0	0
		<i>2011</i>	72	5	10	35	5.9	0.3260	15.4	0
<i>Chicago</i>	<i>Ankle SBP</i>	<i>2008</i>	126	5	13	29	12.7	0.1843	12.8	0
		<i>2009</i>	177	5	8	36	9.5	0.3700	14.1	0
		<i>2010</i>	162	5	12	33	12.2	0.1287	14.9	0
		<i>2011</i>	68	5	10	31	9.3	0.3409	15.8	0
	<i>Arm SBP</i>	<i>2008</i>	64	5	12	34	9.8	0.1196	18.2	0
		<i>2009</i>	90	5	8	42	7.6	0.4911	11.3	0
		<i>2010</i>	81	5	10	33	9.7	0.2368	15.3	0
		<i>2011</i>	34	5	11	34	5.1	0.5130	17.0	0
<i>Miami</i>	<i>Ankle SBP</i>	<i>2008</i>	202	5	5	38	65.5	0.2942	21.8	0
		<i>2009</i>	235	5	6	37	47.0	0.2041	19.3	0
		<i>2010</i>	268	5	8	42	82.9	0.1875	21.0	0
		<i>2011</i>	68	5	6	40	18.2	0.3292	19.4	0
	<i>Arm SBP</i>	<i>2008</i>	101	5	3	43	33.7	0.2596	24.1	1
		<i>2009</i>	118	5	4	55	27.6	0.1609	16.6	0
		<i>2010</i>	134	5	7	43	52.9	0.3209	18.3	0

		No. obs	No. possible final digits	Least freq digit (%)	Most freq digit (%)	Chi-Square for GOF test	P-value for Chi-Square	Digit preference score (DPS)	*Strong evidence of digit preference	
San Diego	Ankle SBP	2011	34	5	5	44	11.1	0.3472	19.7	0
		2008	122	5	12	30	11.8	0.2043	14.8	0
		2009	172	5	12	30	21.2	0.2223	15.0	0
		2010	164	5	10	33	13.6	0.3423	10.7	0
Arm SBP		2011	51	5	10	31	5.7	0.3867	15.2	0
		2008	61	5	8	34	9.7	0.2097	18.7	0
		2009	85	5	9	33	16.9	0.2499	18.0	0
		2010	82	5	9	38	9.4	0.3737	10.6	0
		2011	25	5	9	35	3.4	0.5746	15.2	0

* P-value for GOF test < 0.05 and DPS >= 20

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Table 5.0 Fasting glucose value higher than post-OGTT glucose

Baseline Characteristic	<u>Bronx (N=3463)</u>		<u>Chicago (N=3459)</u>		<u>Miami (N=3504)</u>		<u>San Diego (N=3597)</u>		<u>Overall (N=14023)</u>	
	N	%	N	%	N	%	N	%	N	%
OGTT glucose non-missing	2708	78.2	2754	79.6	2956	84.4	2977	82.8	11395	81.3
OGTT glucose < fasting glucose	651	24.0	569	20.7	622	21.0	634	21.3	2476	21.7
Mar-08-Feb 09	116	23.7	103	20.2	84	20.0	117	18.1	420	20.3
Mar 09-Feb 10	243	25.8	266	20.4	222	19.8	267	22.1	998	21.8
Mar 10-Feb 11	292	22.9	200	21.3	316	22.3	250	22.3	1058	22.3
Fasting*	1381	40.0	1253	36.3	1149	32.9	1233	34.4	5016	35.8
Non-fasting	9	26.5	5	14.3	5	22.7	6	35.3	25	23.2

* More than 8 hours fasting

Based on analysis files created on 03/16/2011.
29MAR11, 15:51 -- HC034727 (AGH)