MANUAL DILUTION LOCAL PROCEDURE

Safety Message

Use universal precautions when handling patient samples.

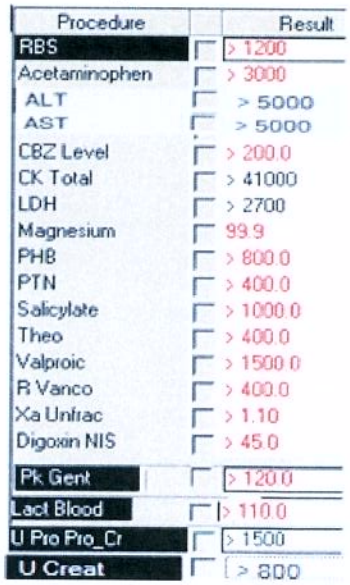
Purpose

To provide instructions on the use of the Manual Dilution Worksheet LCS 7060-C.

Policy

- The Manual Dilution Worksheet LCS 7060-C is to be used to document the manual dilution of results for tests listed in the Regional Dilution Policy results exceeding instrument analytic measuring range (AMR).
- The lowest possible dilution will be used to obtain a result within the instrument's AMR.
- All instrument generated reports will be attached to the Manual Dilution Worksheet LCS 7060-C
- Submit completed worksheet and print-outs to manager for review.

Procedure

Step	Action
1	Attach a reprint of the accession # onto the worksheet.
2	Select the lowest possible dilution to obtain a result within the instrument's AMR.
3	Perform the dilution with the appropriate verified diluent from the instrument's Chemistry Information Sheet manual.
4.	Program the dilution into the instrument. • With or without ORDAC • Enter dilution factor
5.	Front-load diluted sample.
6.	Print results from instrument.
7.	Enter results in Remisol manually. • If results are greater than procedural limits in Cerner:  • Add in results comments section: ○ Verified by dilution comment e.g., ***CK 56,000 IU/L, Verified by dilution*** • Validate results

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Procedure

Step	Action
8.	Complete the Manual Dilution Worksheet LCS 7060-B and submit for manager review with instrument print-outs attached.

References

- Manual Dilution Policy, SCPMG QMS-0024,Rev 3
- Chemistry Information Sheets, Synchron DxC analyzer, Beckman Coulter.

Attachment

- Attachment A: Manual Dilution Worksheet LCS 7060-C

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Document History Page

Change type: New, Major, Minor etc.	Changes Made to SOP – describe	Signature responsible person/date	Laboratory Operations Director Reviewed/ date	Laboratory Medical Director Reviewed/ Date	Date change implemented
New		M.Acosta 03-15-16	J.Wolf 03-21-16	S.Wirio MD 03-25-16	03-25-16
Major	• Updated Manual Dilution Worksheet to reflect ALT and AST linear limits in Cerner.	R.Castaneto 08-08-18	J.Wolf 08-09-18	S.Wirio MD 08-09-18	08-13-18
Major	• Updated manual Dilution Worksheet to reflect Urine CREm linear limits in Cerner.	10/17/18	10/18/18	11/6/18	11-6-18

MANUAL DILUTION LOCAL PROCEDURE

ATTACHMENT A

KAISER PERMANENTE
South Bay Medical Center Laboratory
Chemistry Department

CLS Initials: _____
Date: _____

Analyte being Diluted: _____

Results Reported: _____

Tests listed below have been approved for dilution by SCPMG Lab Systems:		
	TDMs:	
ALT***	Acetaminophen	Salicylate
AST***	Digoxin	Tegretol/Carbamazepine
CK*	Dilantin/	Theophylline
Glucose (Auto-ORDAC)	Gentamycin	Valproic Acid
hCG	Phenobarbital	Vancomycin
Lactic Acid	STA-R Evolution	Anti-Xa
LDH		
Magnesium		
Urine CREm***		
Urine Total Protein (mTP)		

1. Indicate dilution used by drawing a circle around dilution factor.
2. Answer question whether ORDAC was used in programming dilution on DXC.
3. Identify the diluent used.
4. Attach all instrument forms to this worksheet and place in QC review bin for manager review.

DILUTION FACTOR	SAMPLE	DILUENT
2	100 µL	100 µL
3	100 µL	200 µL
5	100 µL	400 µL
10	100 µL	900 µL
15	100 µL	1400 µL
20	50 µL	950 µL
50	10 µL	490 µL
100	10 µL	990 µL

For CK only

Manual ORDAC requested?
YES ____
NO ____

Diluent used: Saline | DI Water | QC Material | Normal Pooled Plasma
other: _____

NOTE: Verify diluent in Chemistry Information Sheet Manual

Comments:

Cerner Procedural Limits

Procedure	Result
RBS	1500
Acetaminophen	> 300
ALT	> 5000
AST	> 6000
CBZ Level	> 30.0
CK Total	> 41000
LDH	> 2700
Magnesium	9.9
PHB	> 800.0
PTN	> 400.0
Salicylate	> 1000.0
Theo	> 400.0
Valproic	> 1500.0
R Vanco	> 400.0
Xa Unfrac	> 1.10
Digoxin NIS	> 4.5.0
Pk Gent	1200
Lact Blood	> 11.0
U Pro Pro_Cr	1500
U Creat	> 800

***Urine CREm max dilution is 1:2
**ALT and AST max dilution is 1:15
* CK may be diluted greater than 1:10

Manual Dilution Worksheet LCS 7060-C

L:\Lab\Chemistry\Forms\Forms in Use\Manual Dilution Worksheet