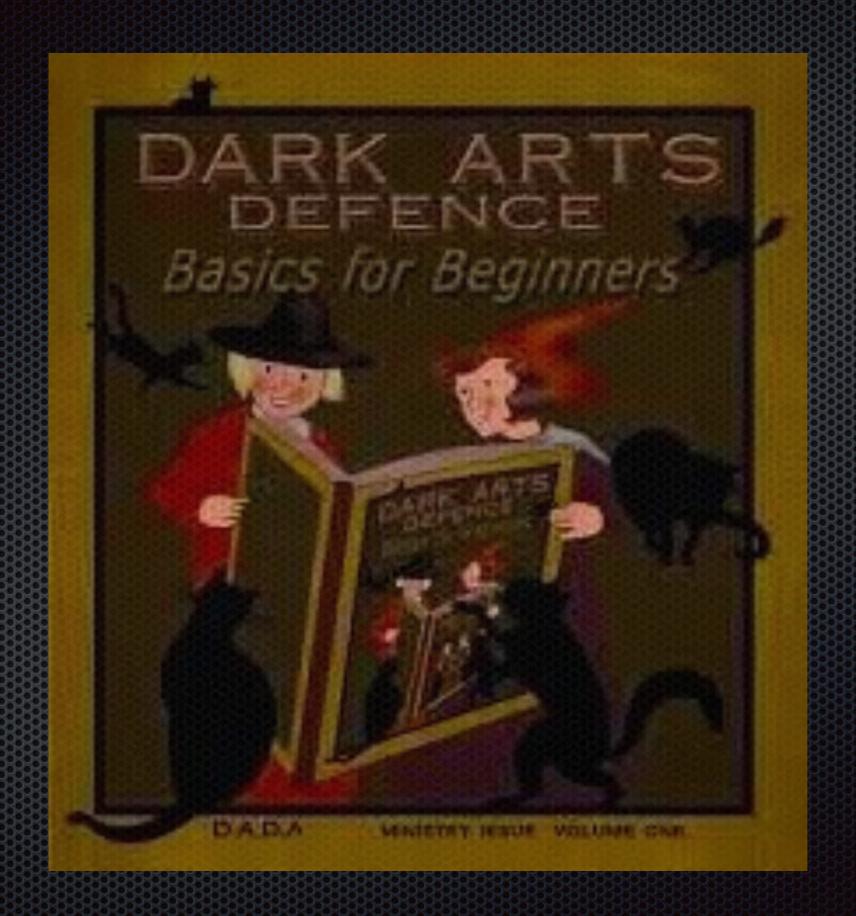
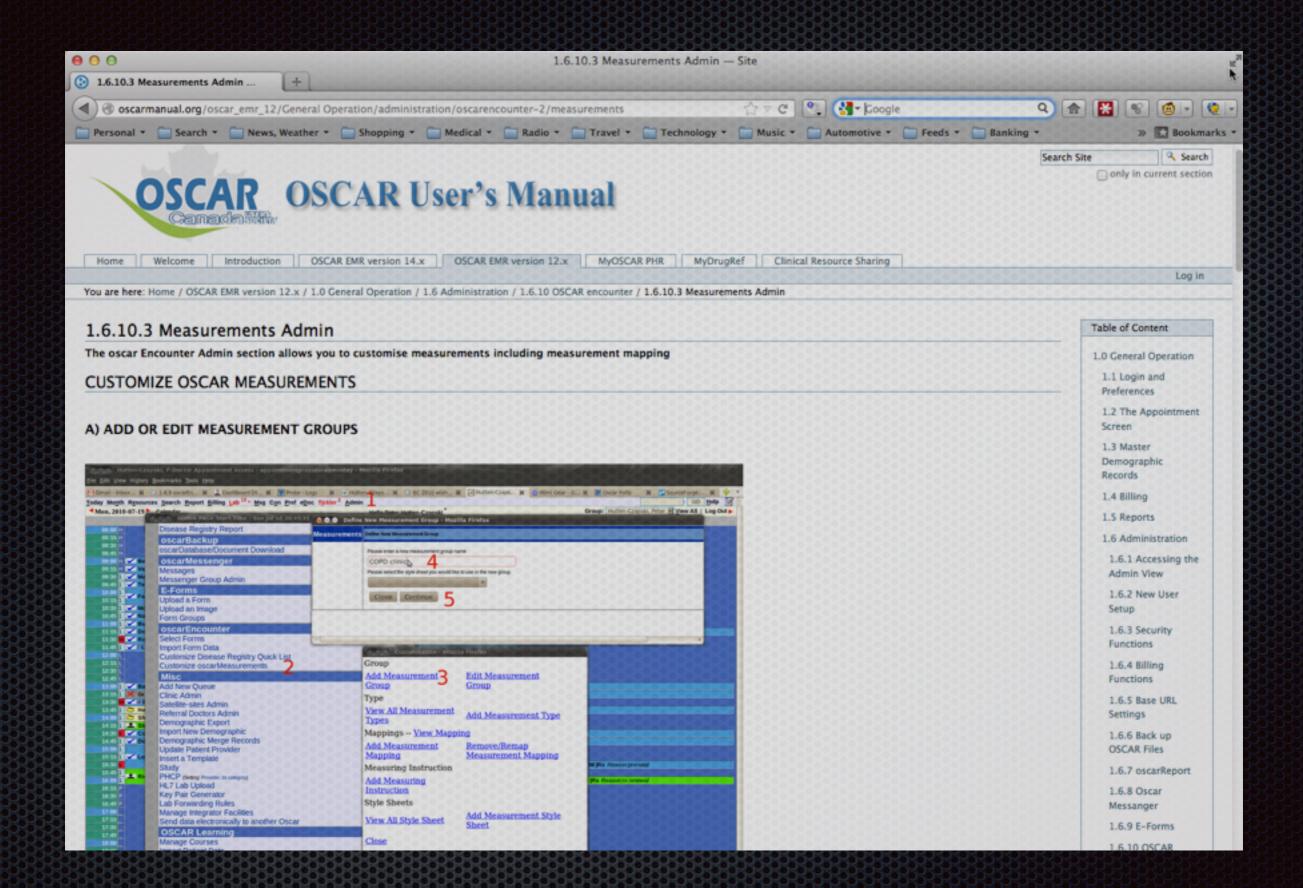


Dr. Herbert Chang

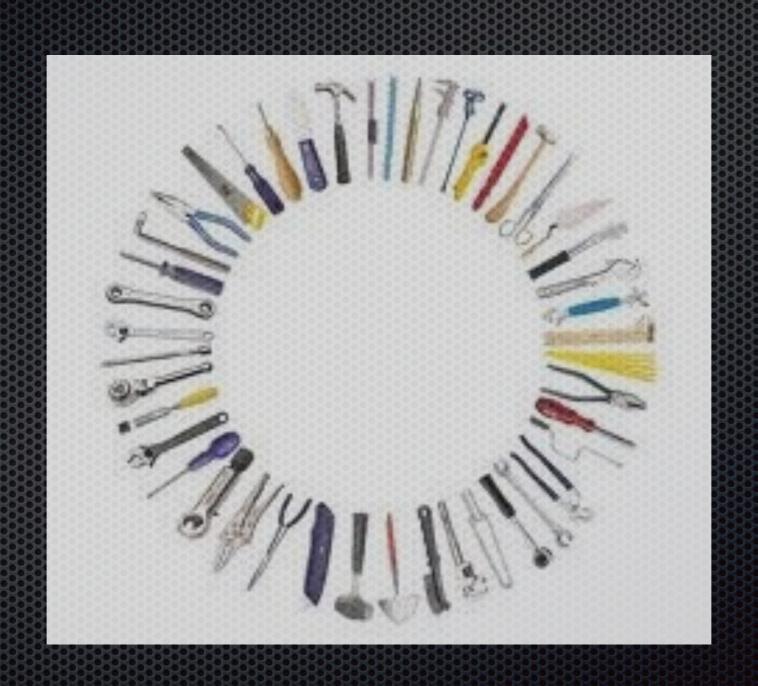




#### What are Measurements?



"Dashboard"



- Monitor Lab Values
  - Chronic care (DM, CHF, CKD)
  - "One off" lab values

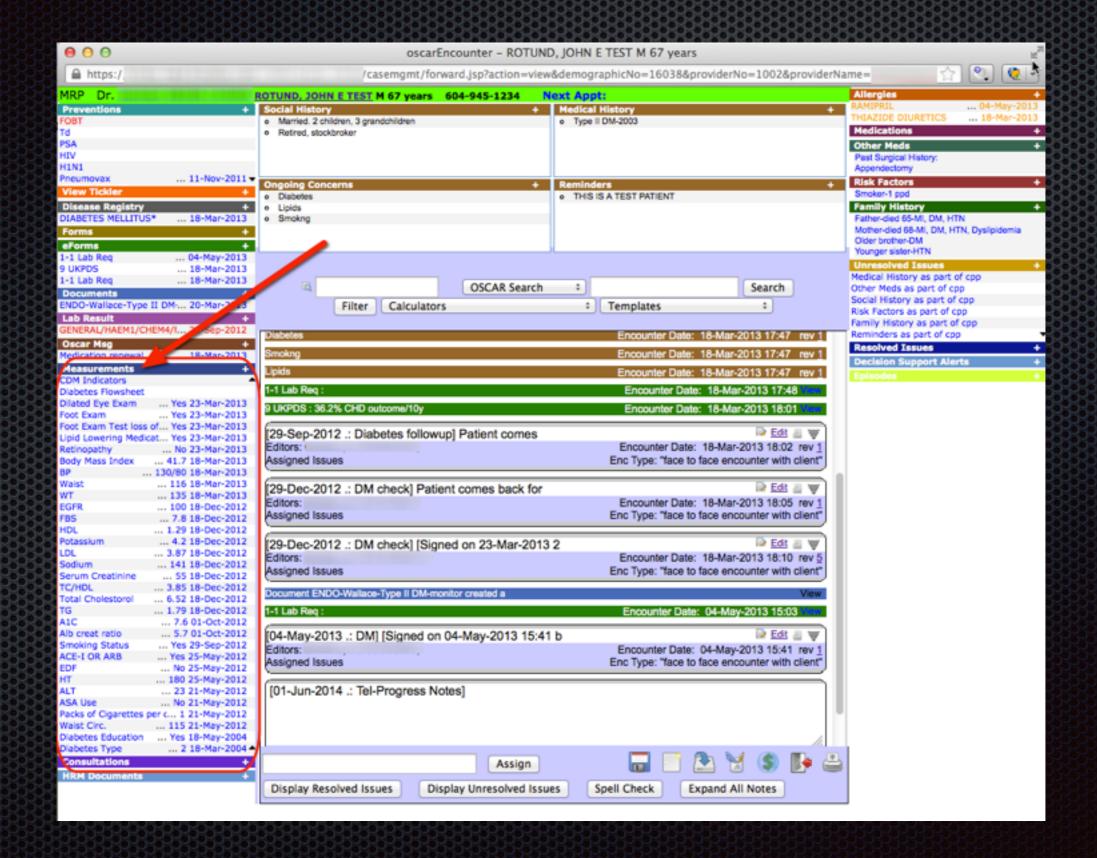
- Monitor Lab Values
  - Chronic care (DM, CHF, CKD)
  - "One off" lab values
- Store database entries
  - for ease of access and tracking
  - for eForms

- Monitor Lab Values
  - Chronic care (DM, CHF, CKD)
  - "One off" lab values
- Store database entries
  - for ease of access and tracking
  - for eForms
- Track Allergy Injections

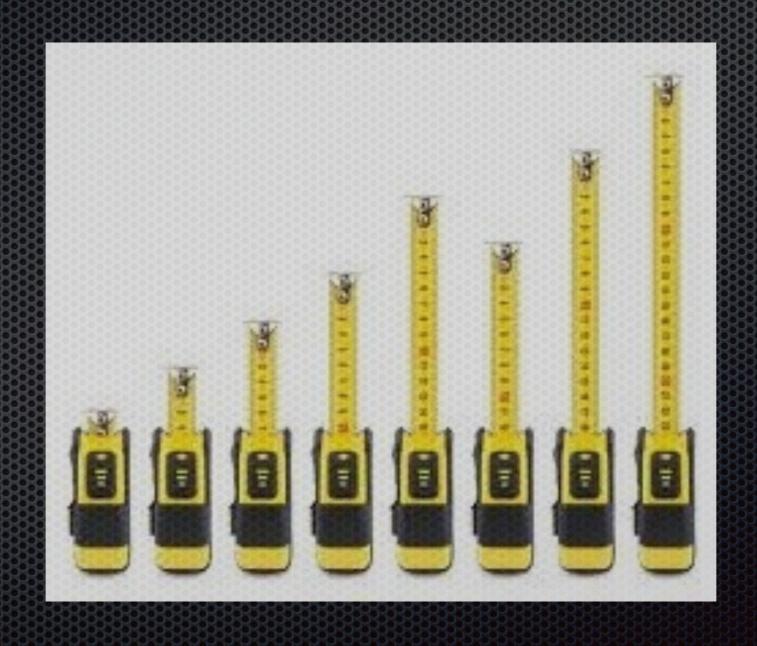
#### Where are Measurements located?



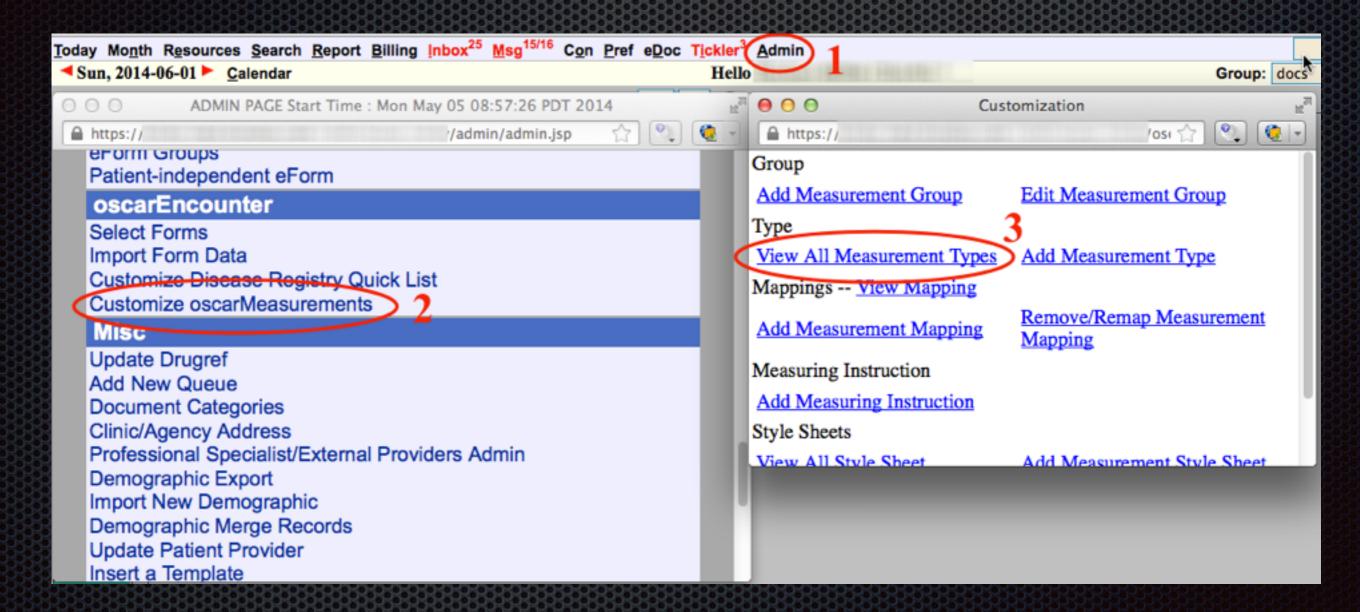
#### Where are Measurements located?



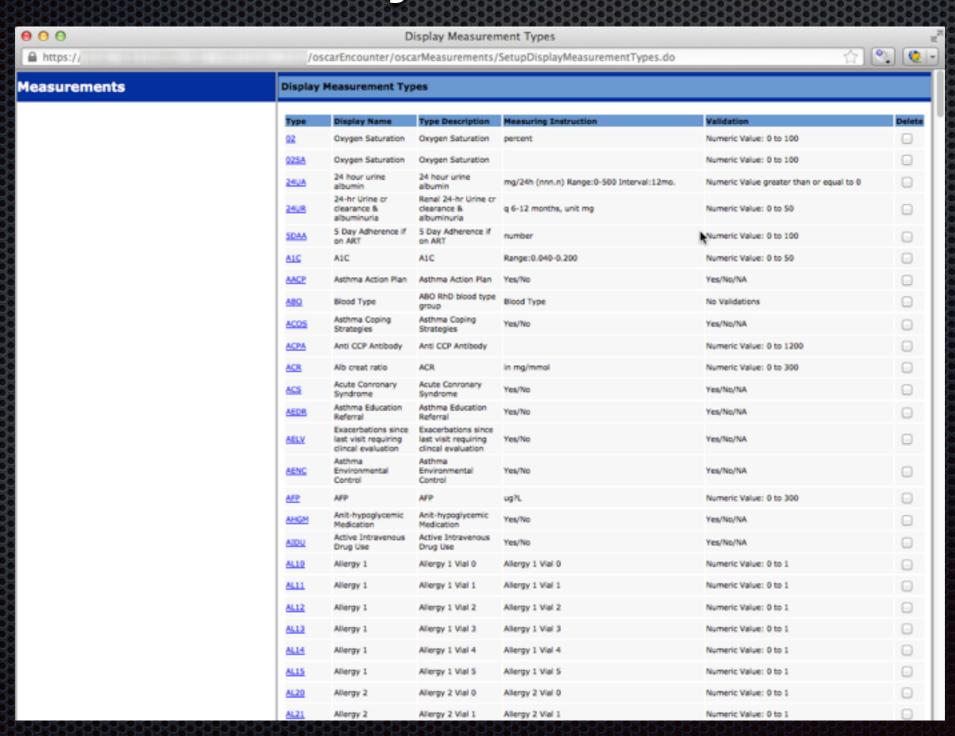
## Which Measurements Do I Have Already?

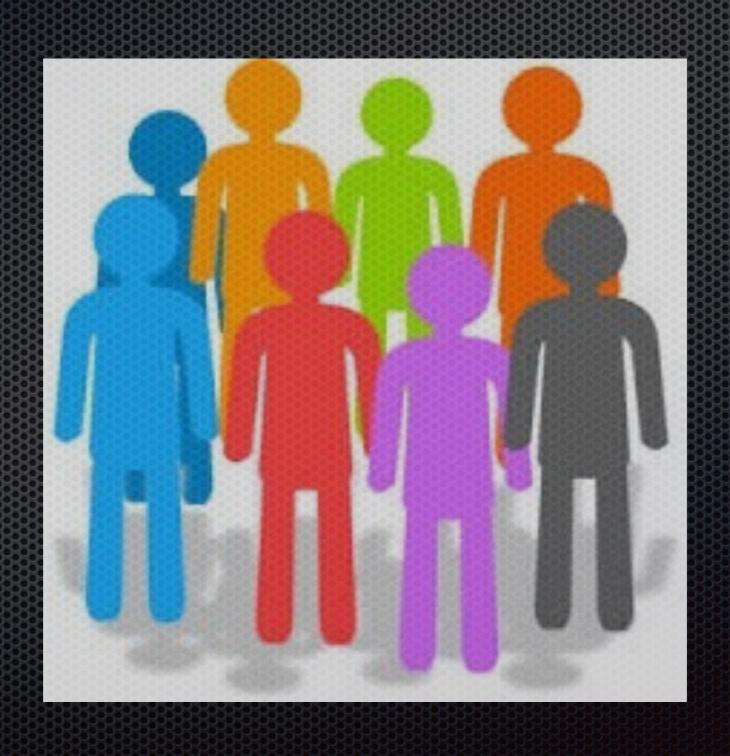


## Which Measurements Do I Have Already?



## Which Measurements Do I Have Already?





Manually

Automatically

- Manually
  - Measurement Groups
  - Chronic Disease Flow sheets
  - eForms
- Automatically
  - Laboratory uploads

- Manually
  - Measurement Groups
  - Chronic Disease Flow sheets
  - eForms
- Automatically
  - Laboratory uploads

## Manual Measurement Entry

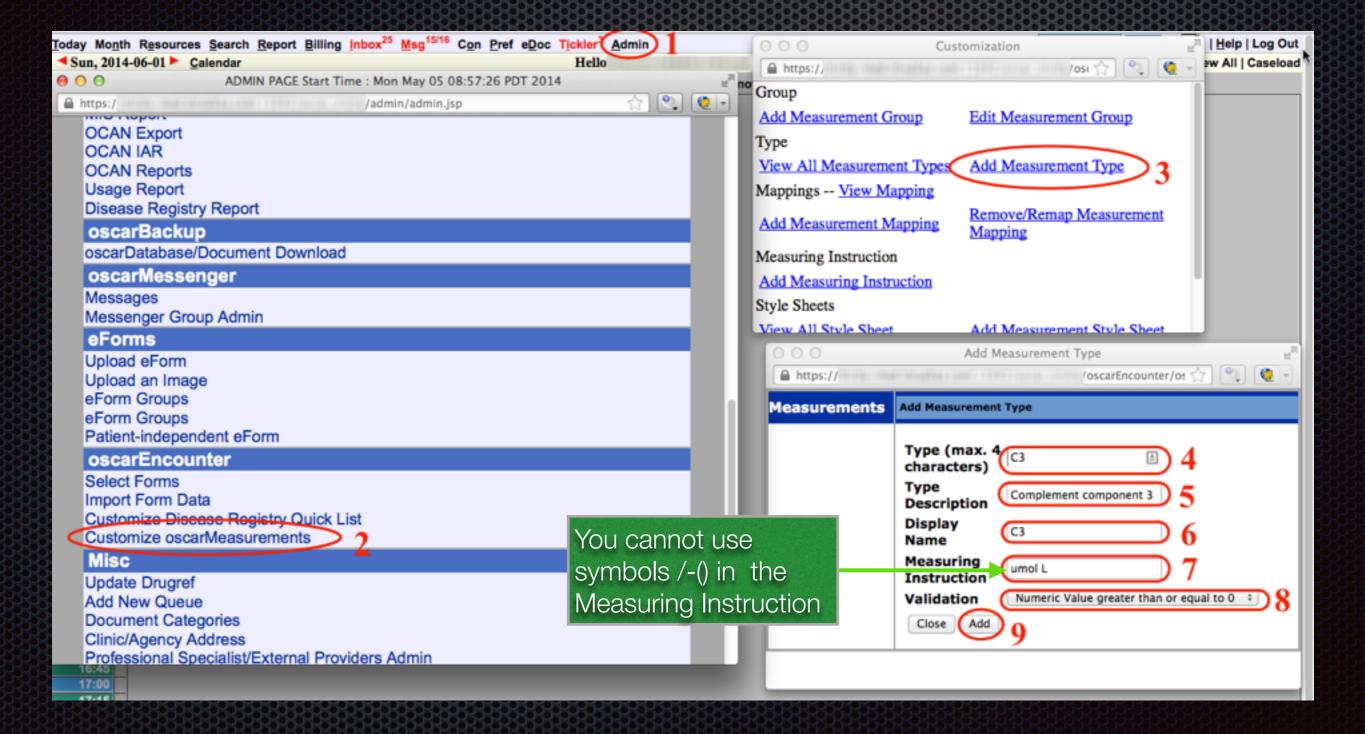
using Measurement Groups

### Manual Measurement Entry

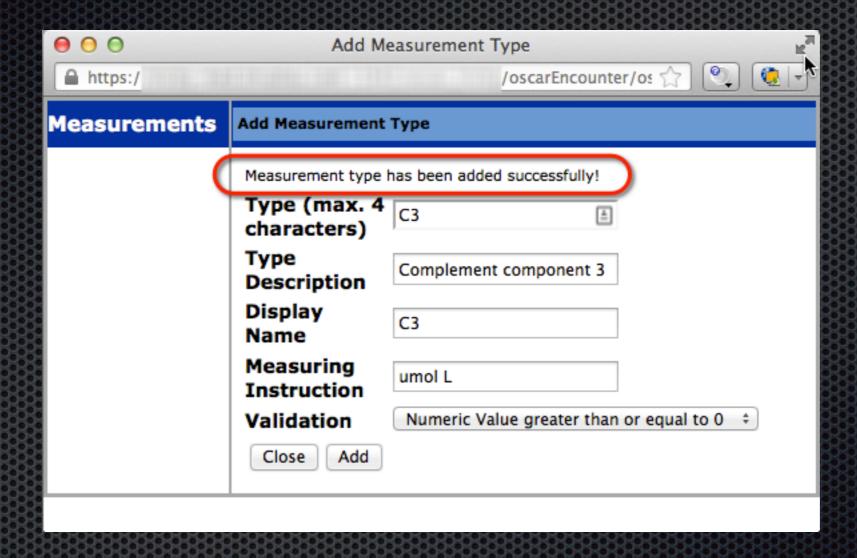
using Measurement Groups

- 1. Create Measurement
- 2. Create Measurement Group
- 3. Add Measurement to Measurement Group

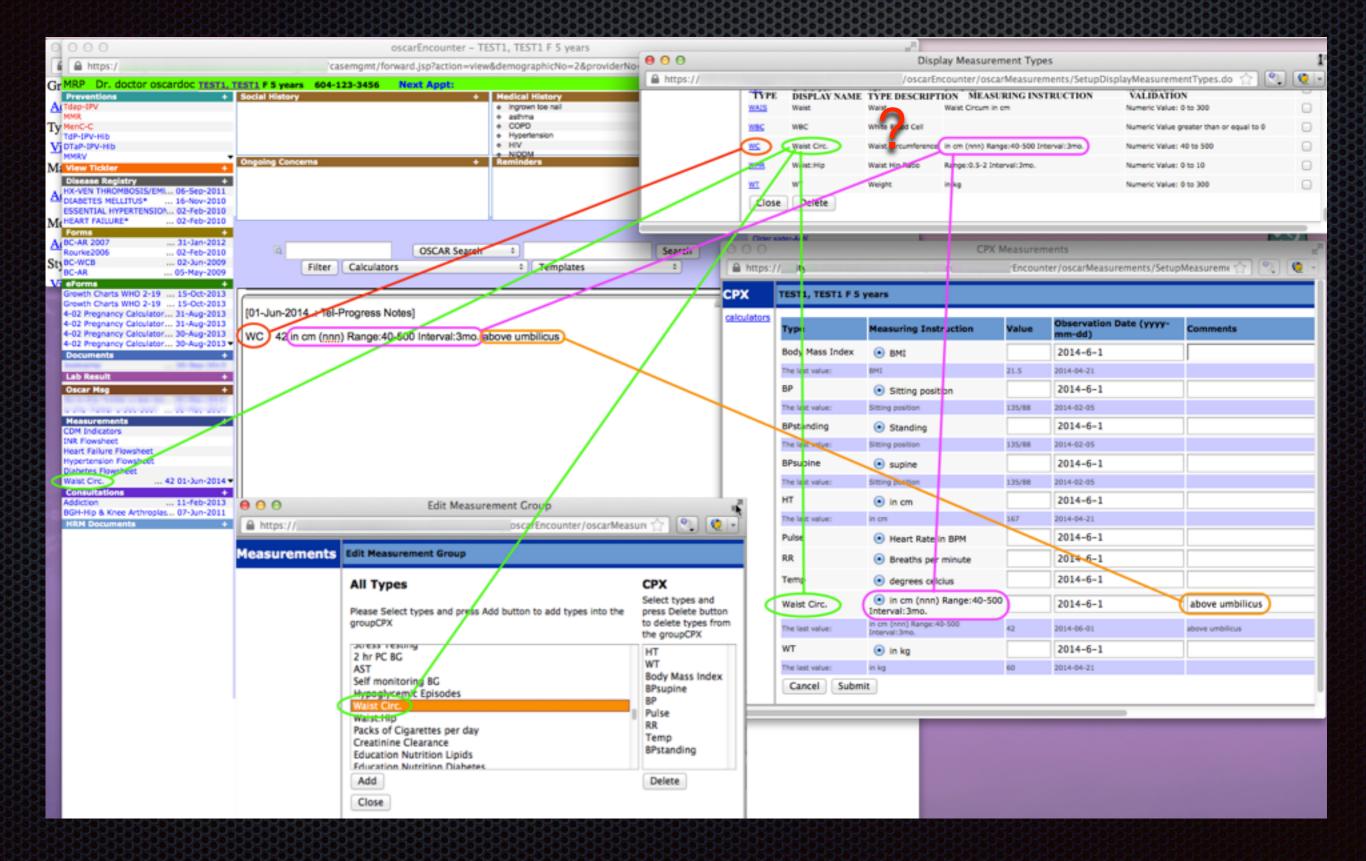
#### 1. Create Measurement



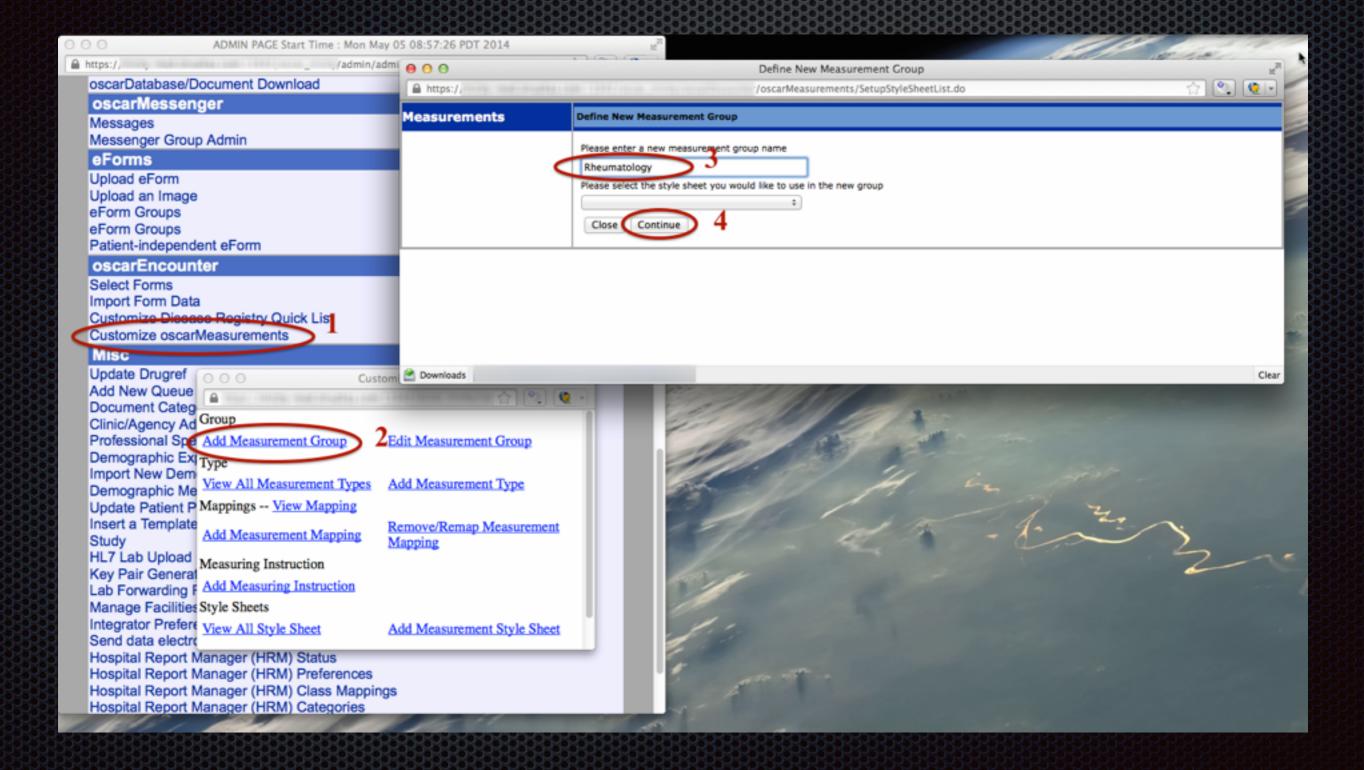
#### 1. Create Measurement



#### Measurement Type/Name/Description

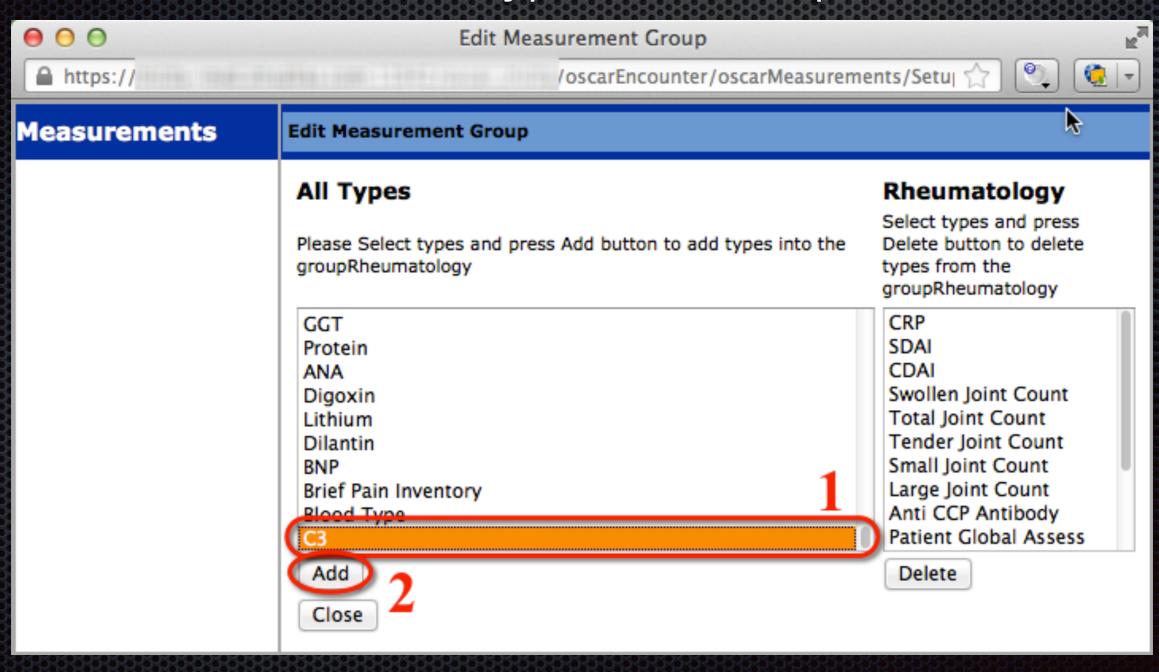


### 2. Create Measurement Group

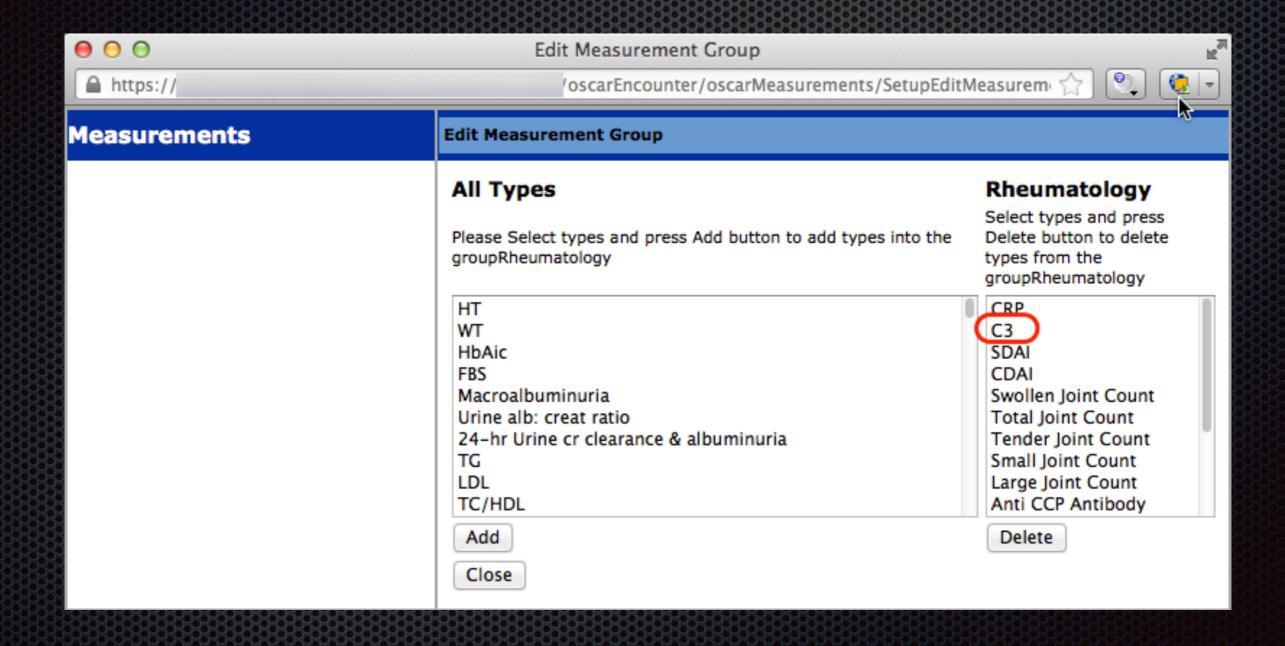


### 2. Create Measurement Group

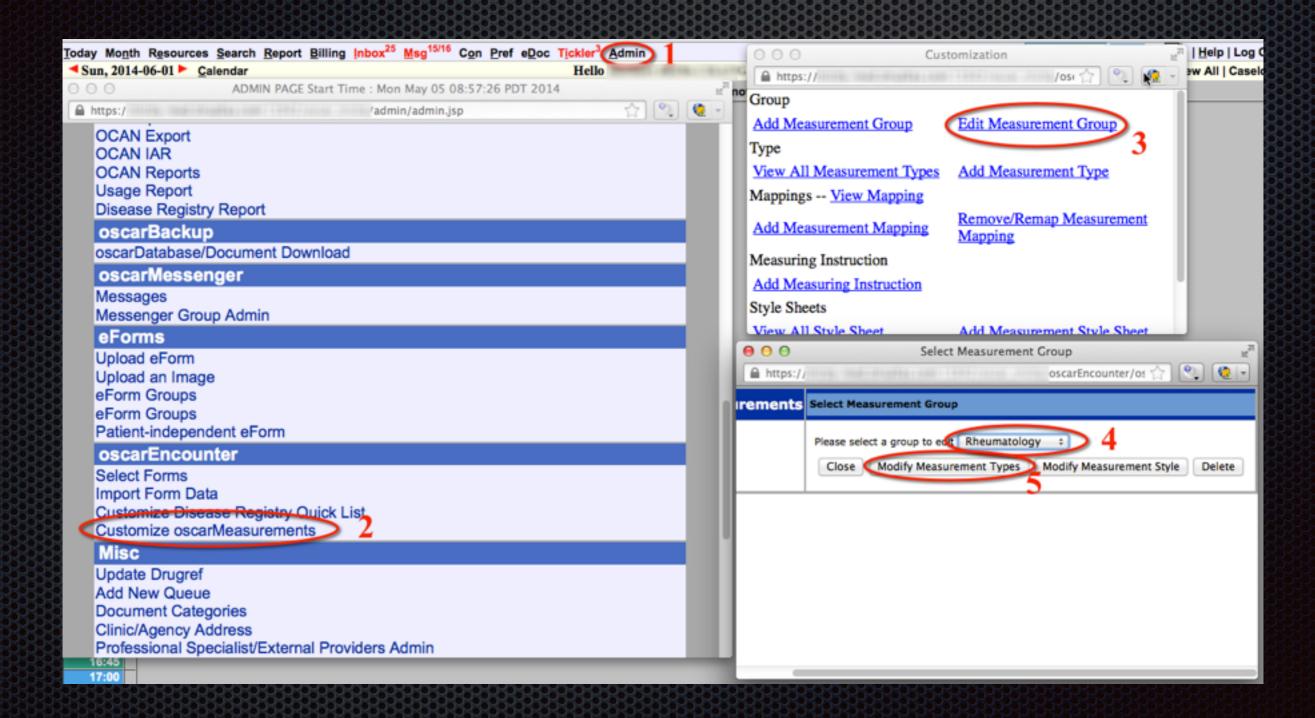
#### Add Measurement Types to Group created



### 2. Create Measurement Group

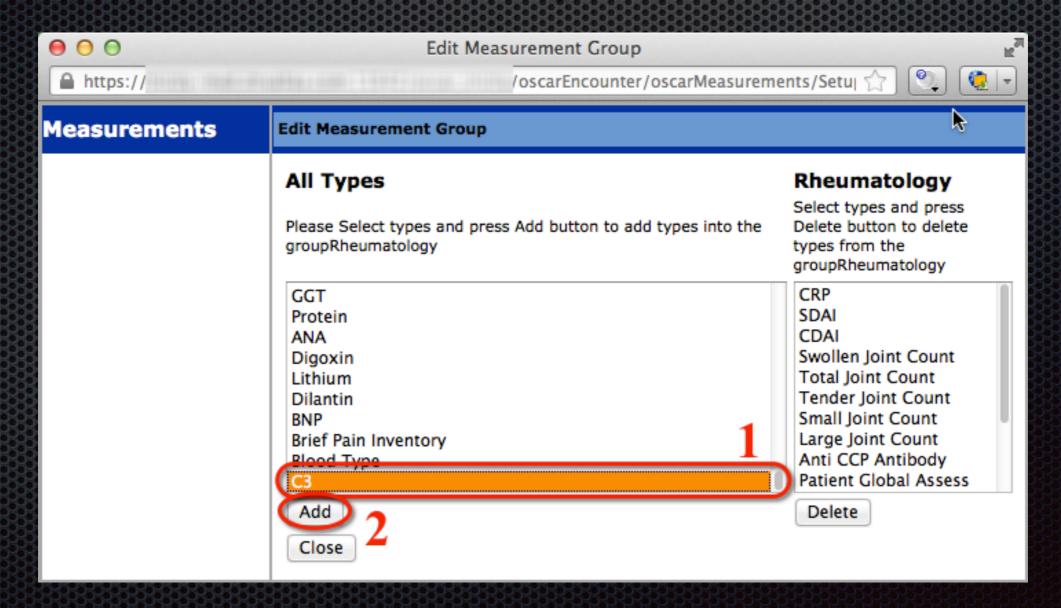


### 3. Edit Measurement Group



### 3. Edit Measurement Group

Manually choose and Add Measurement Types to the desired groups



## Editing Measurement Types

Measurement Types cannot be edited



## Editing Measurement Types

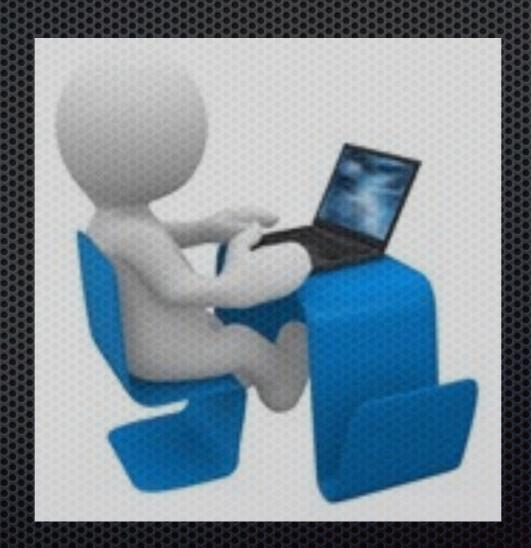
- Measurement Types cannot be edited
- You must delete the Measurement Type
- Create it again with the changes desired
- Add it back to the Measurement Group

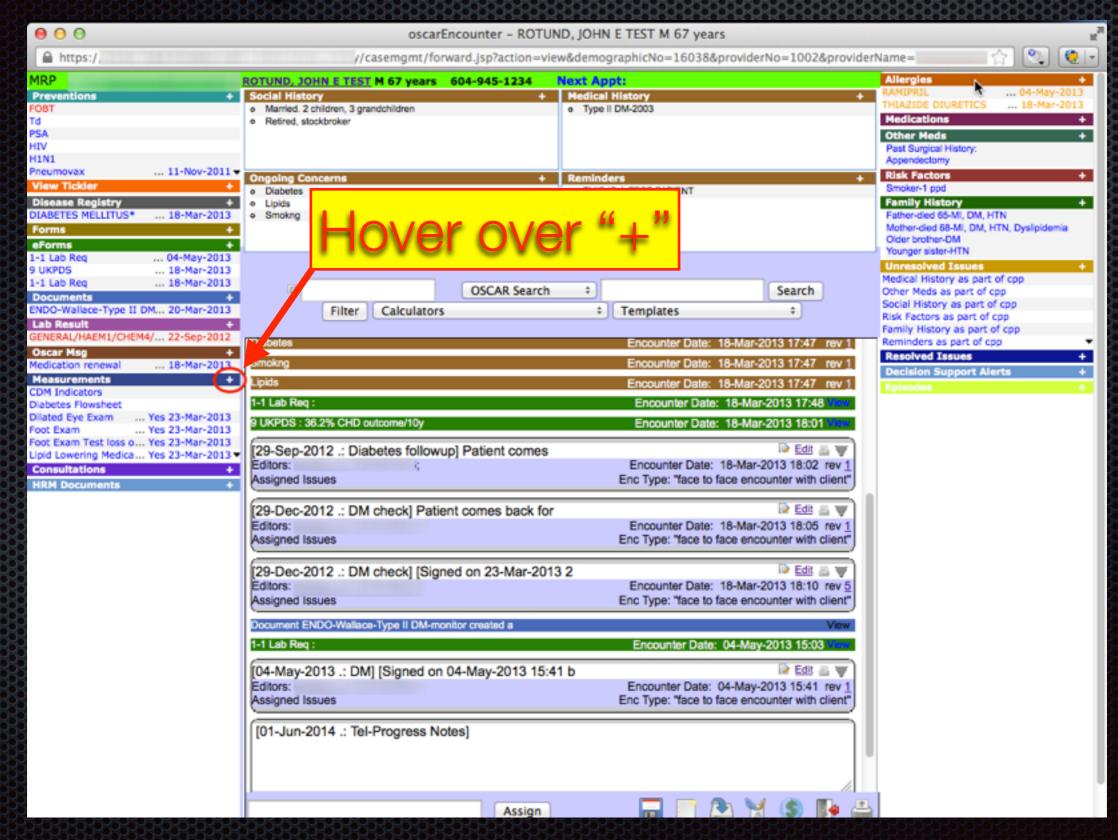
## Editing Measurement Types

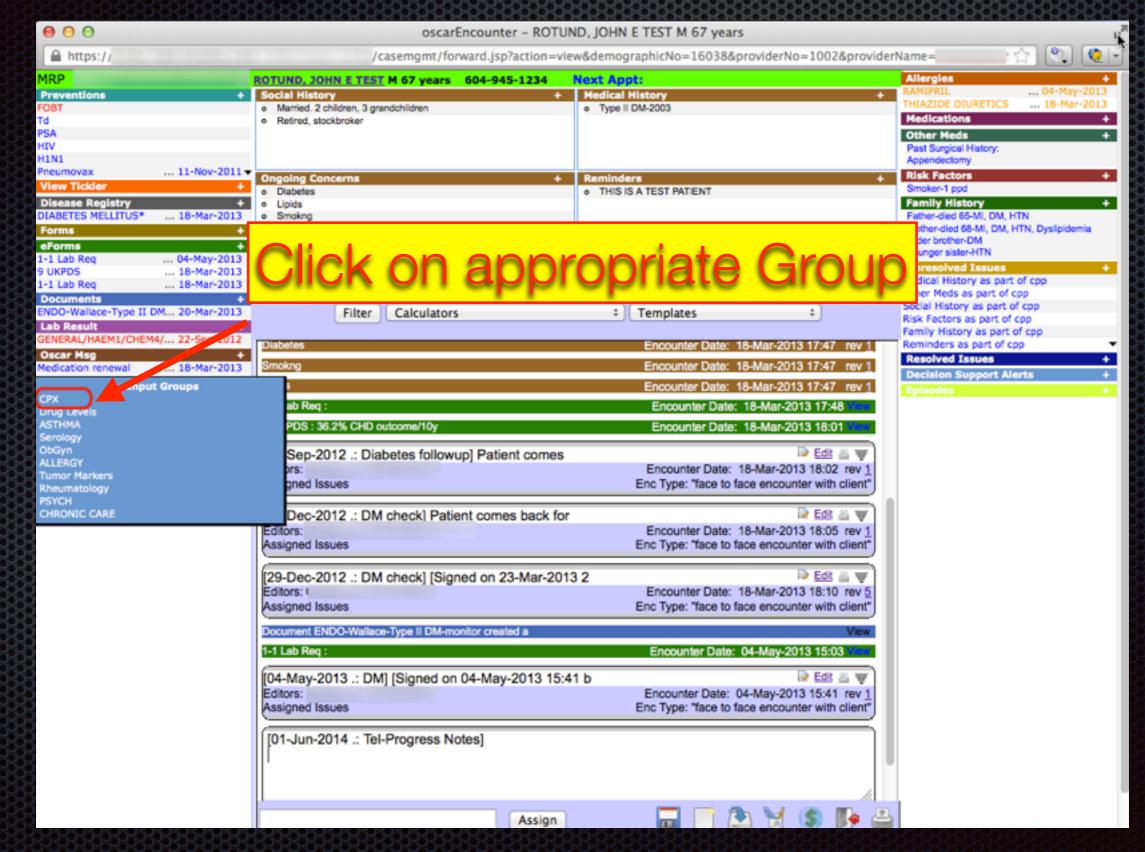
- Measurement Types cannot be edited
- You must delete the Measurement Type
- Create it again with the changes desired
- Add it back to the Measurement Group
- You do not appear to lose the Measurements that have previously been stored when you delete or edit the Measurement Type (although they will not link if you change the Measurement Type Name)

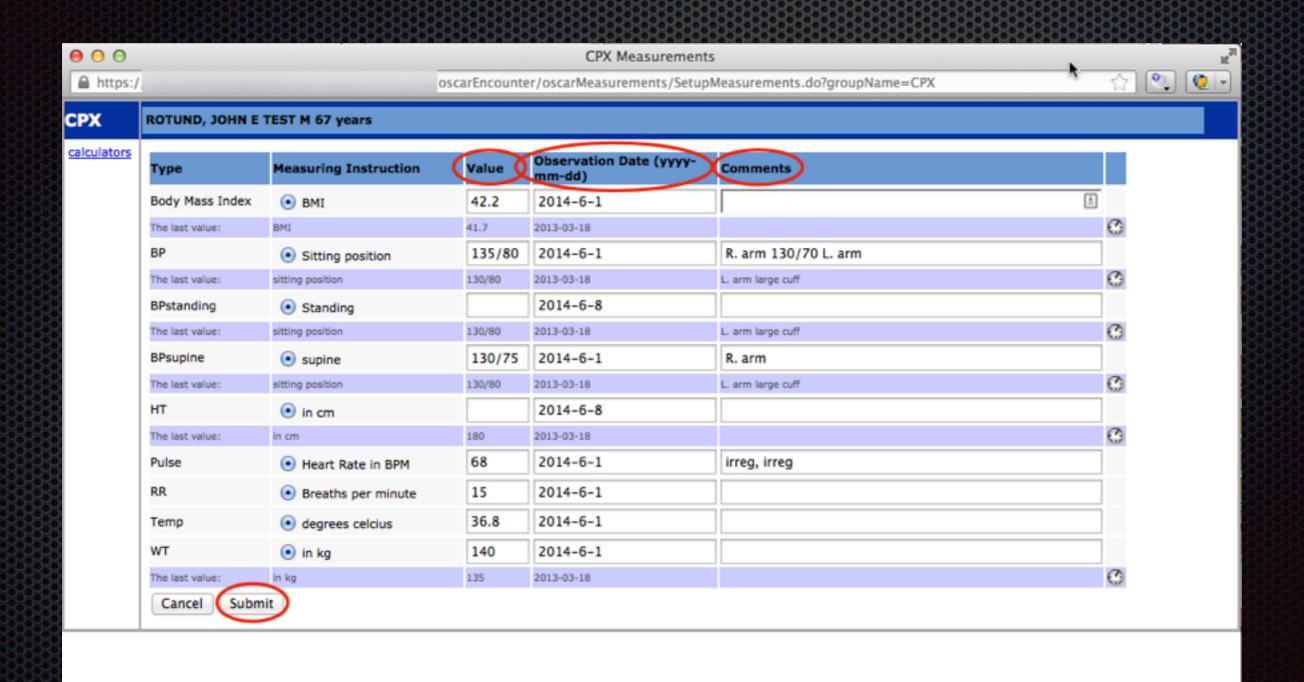
## Manual Measurement Entry

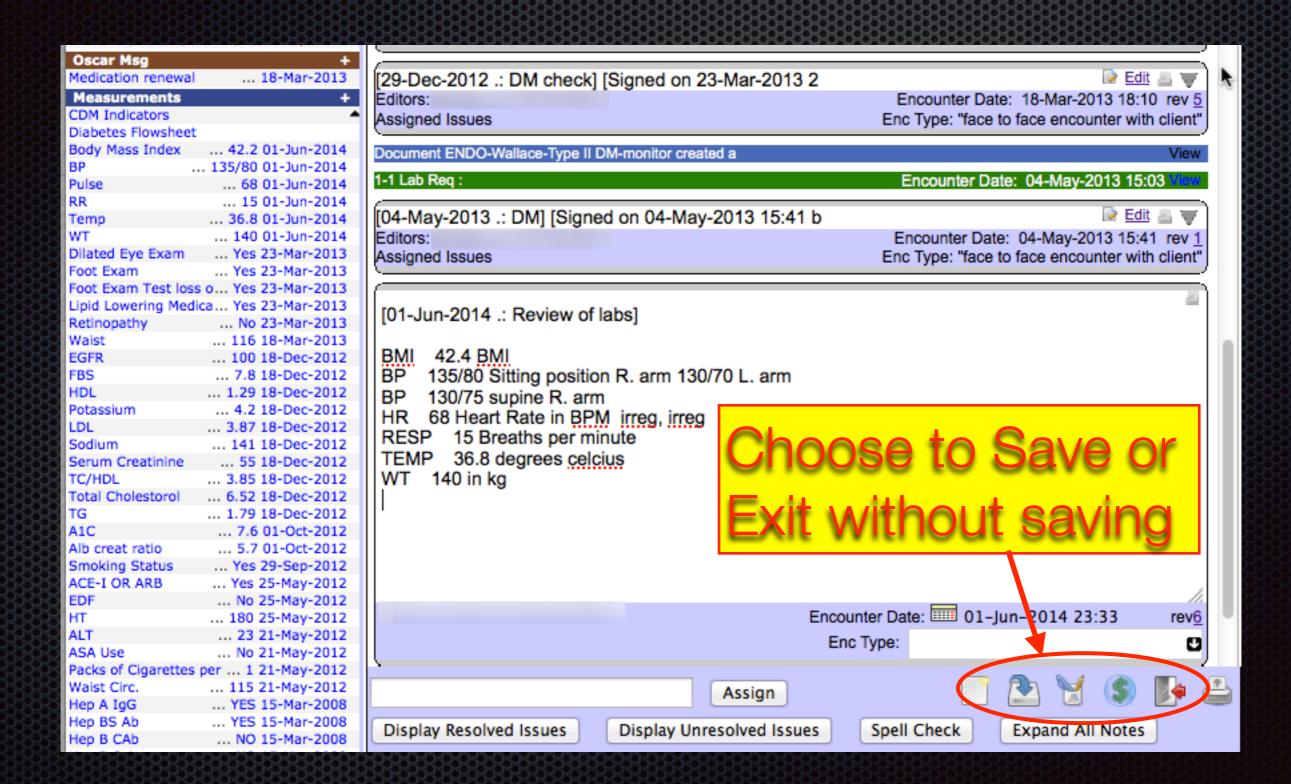
using Measurement Groups

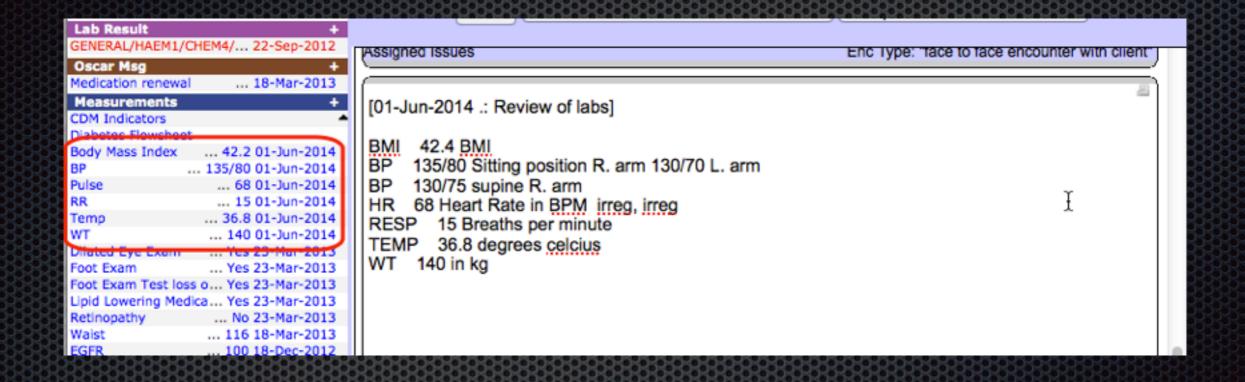










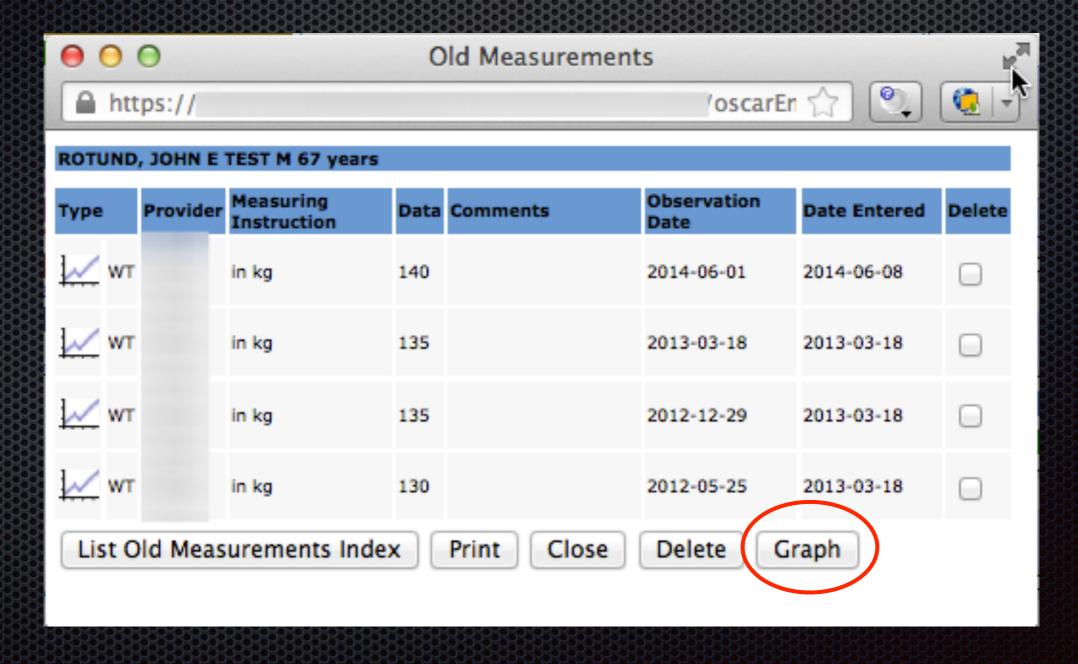


### Graphing Measurement Data

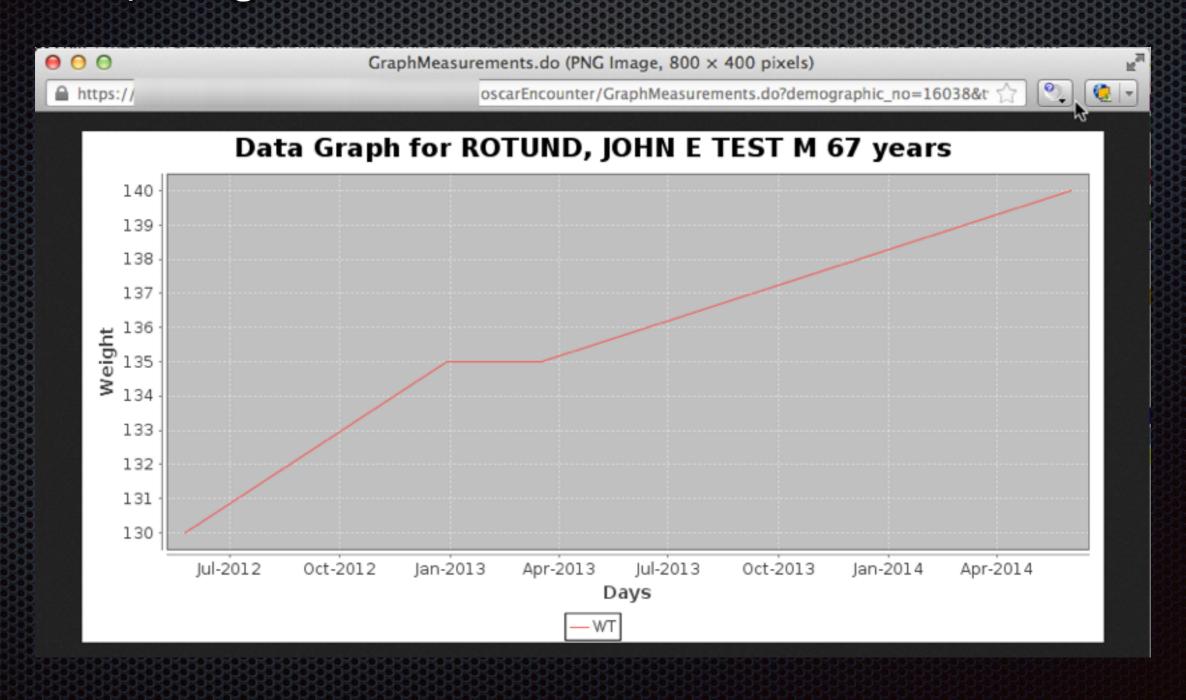
Click on the Measurement you would like to graph

```
Measurements
CDM Indicators
Diabetes Flowsheet
Body Mass Index
                    ... 42.2 01-Jun-2014
BP
                  ... 135/80 01-Jun-2014
Pulse
                      ... 68 01-Jun-2014
RR
                      ... 15 01-Jun-2014
Temp
                     ... 36.8 01-Jun-2014
                     ... 140 01-Jun-2014
Dilated Eye Exam
                     ... Yes 23-Mar-2013
                     ... Yes 23-Mar-2013
Foot Exam Test loss o... Yes 23-Mar-2013
Lipid Lowering Medica... Yes 23-Mar-2013
Retinopathy
                      ... No 23-Mar-2013
Waist
                     ... 116 18-Mar-2013
EGFR
                     ... 100 18-Dec-2012
FBS
                     ... 7.8 18-Dec-2012
                    ... 1.29 18-Dec-2012
HDL
```

### Graphing Measurement Data



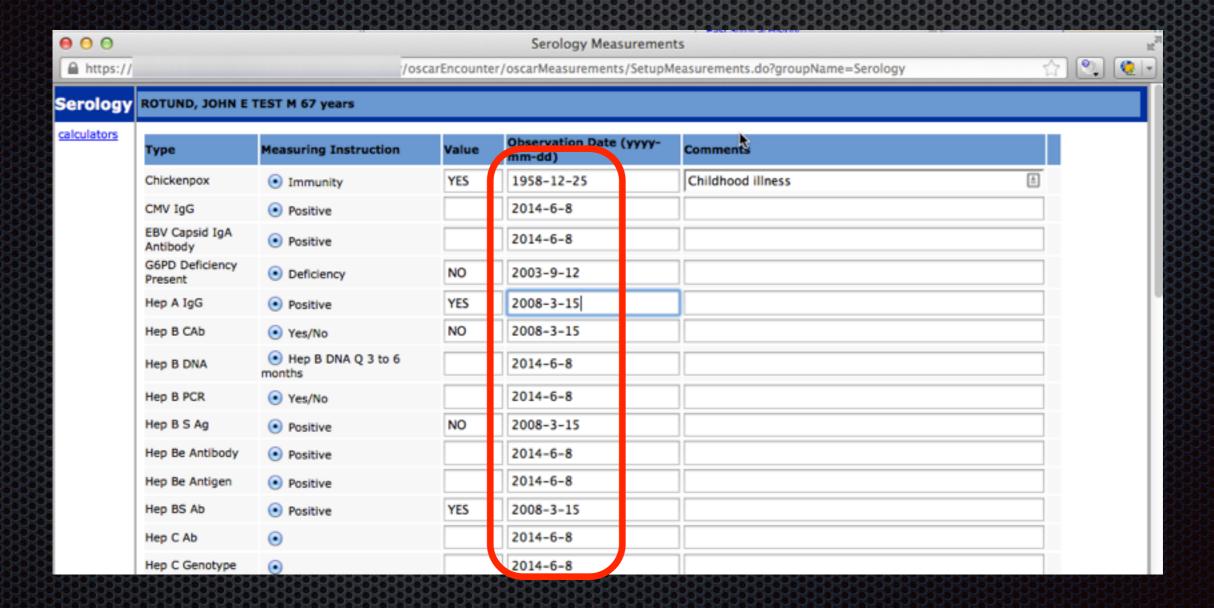
## Graphing Measurement Data



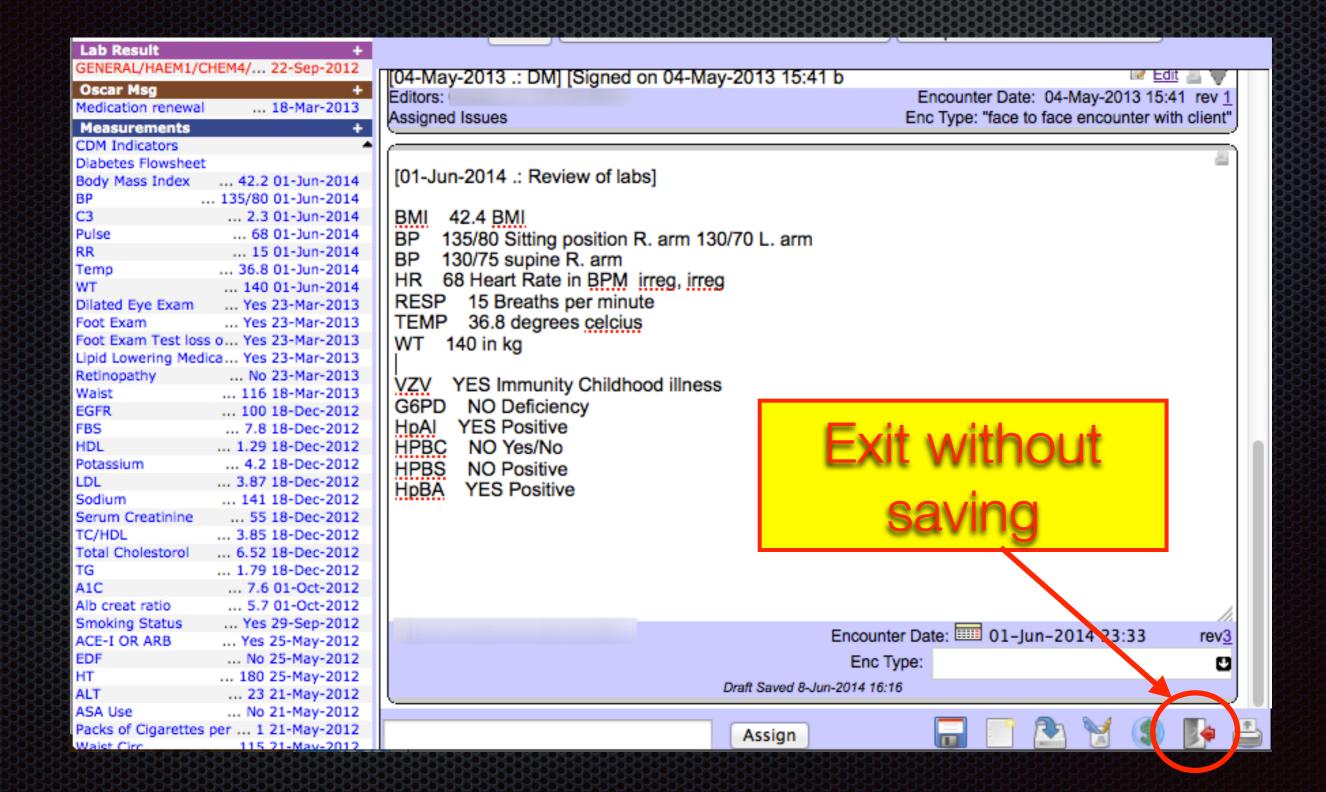
Historical Data using Measurement Groups

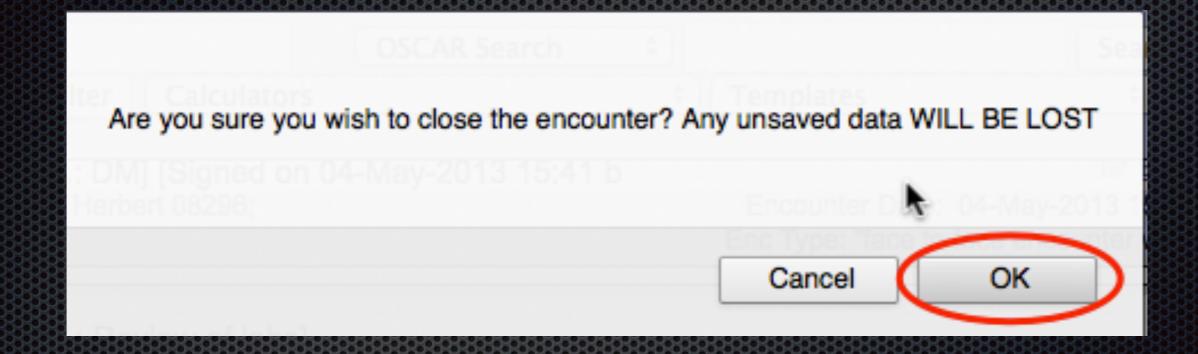


Important to add correct Observation Date



Scroll to bottom and click Save



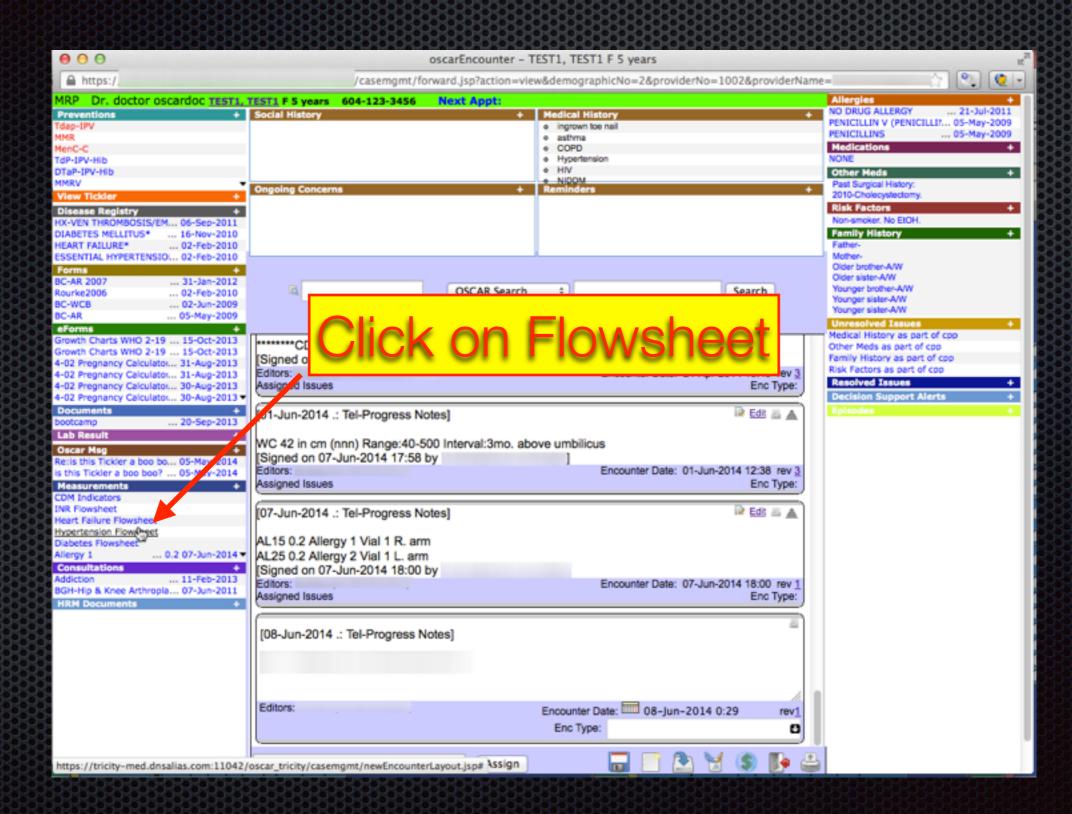


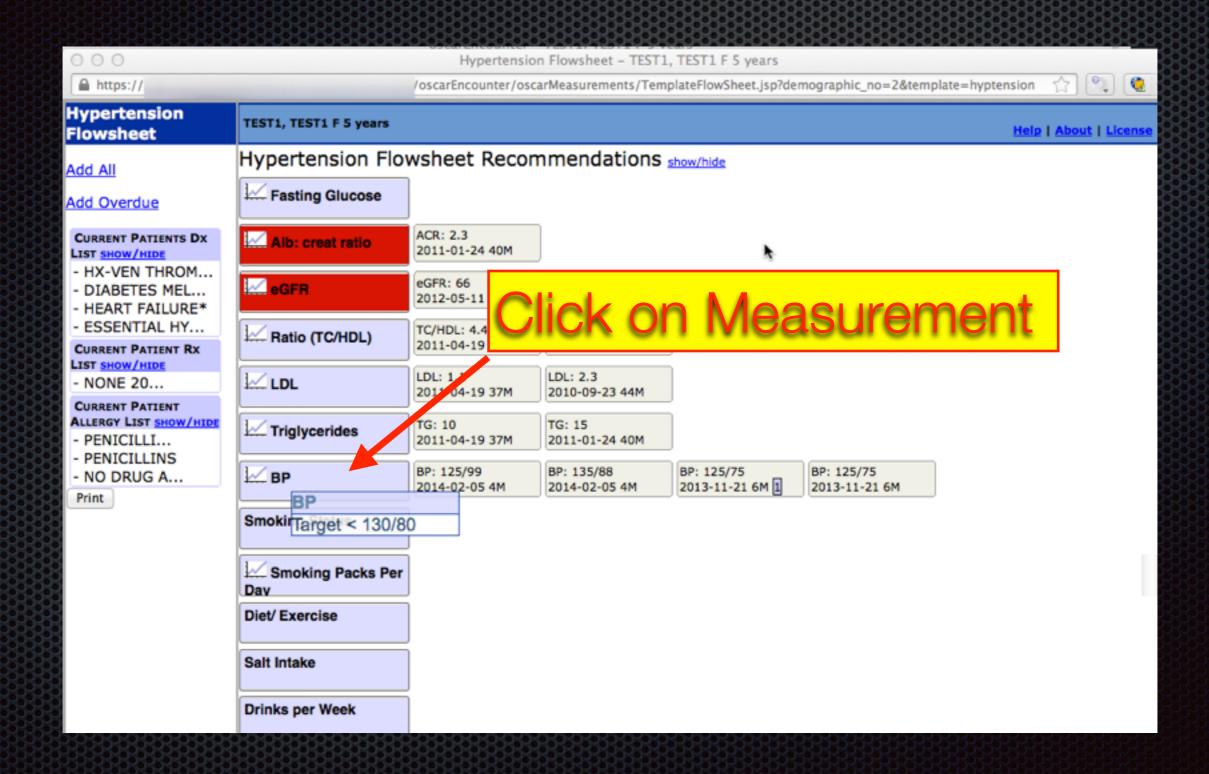
### Data is stored by the Observation Date entered

```
Waist
                    ... 116 18-Mar-2013
EGFR
                     ... 100 18-Dec-2012
FBS
                     ... 7.8 18-Dec-2012
                                           [01-Jun-2014 .: Review of labs]
HDL
                    ... 1.29 18-Dec-2012
Potassium
                     ... 4.2 18-Dec-2012
                                           BMI 42.4 BMI
LDL
                    ... 3.87 18-Dec-2012
                                                 135/80 Sitting position R. arm 130/70 L. arm
                                           BP
Sodium
                    ... 141 18-Dec-2012
                                                 130/75 supine R. arm
Serum Creatinine
                     ... 55 18-Dec-2012
                                                 68 Heart Rate in BPM irreg, irreg
TC/HDL
                    ... 3.85 18-Dec-2012
                    ... 6.52 18-Dec-2012
Total Cholestorol
                                                     15 Breaths per minute
                                           RESP
TG
                    ... 1.79 18-Dec-2012
                                           TEMP
                                                     36.8 degrees celcius
A1C
                     ... 7.6 01-Oct-2012
                                           WT 140 in kg
Alb creat ratio
                     ... 5.7 01-Oct-2012
                     ... Yes 29-Sep-2012
Smoking Status
ACE-I OR ARB
                    ... Yes 25-May-2012
EDF
                     ... No 25-May-2012
HT
                    ... 180 25-May-2012
ALT
                     ... 23 21-May-2012
ASA Use
                     ... No 21-May-2012
Packs of Cigarettes per di... 1 21-May-2012
                       115 21-May-2012
                                                                                          Assign
Hep A IgG
                     ... YES 15-Mar-2008
Hep BS Ab
                    ... YES 15-Mar-2008
                                                                                                              Spell Check
                                            Display Resolved Issues
                                                                            Display Unresolved Issues
                                                                                                                                 Expand All Notes
                     ... NO 15-Mar-2008
Hep B CAb
Hep B S Ag
                     ... NO 15-Mar-2008
                    ... Yes 18-May-2004
Diabetes Education
Diabetes Type
                      ... 2 18-Mar-2004
G6PD Deficiency Presen... NO 12-Sep-2003
                    ... YES 25-Dec-1958
Chickenpox
Consultations
```

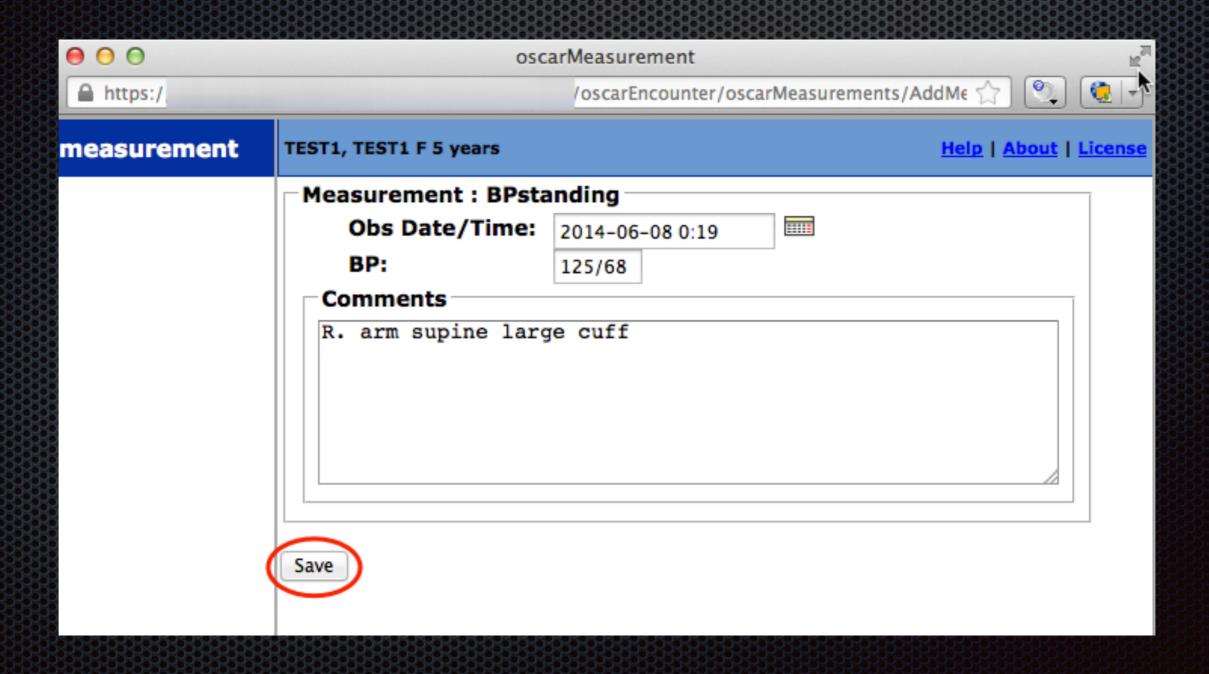
# How are Measurements populated?

- Manually
  - Measurement Groups
  - Chronic Disease Flow sheets
  - eForms
- Automatically
  - Laboratory uploads

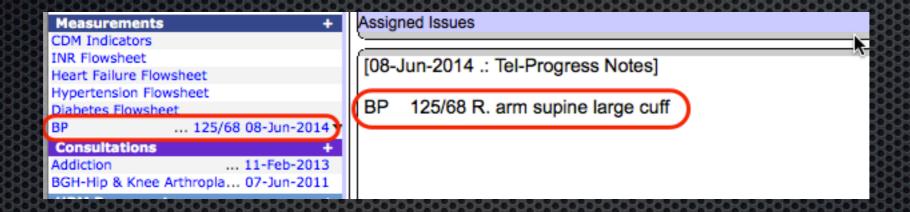




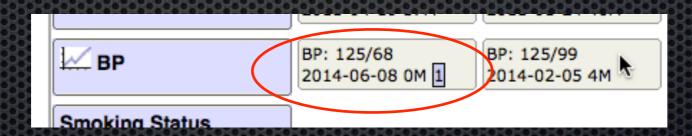
#### Add Measurement values



## Chart entry



### Flowsheet entry



# How are Measurements populated?

- Manually
  - Measurement Groups
  - Chronic Disease Flow sheets
  - eForms
- Automatically
  - Laboratory uploads

## Manual Measurement Entry

using eForms (can be 2 way flow)

requires use of Database Tags

## Manual Measurement Entry

using eForms (can be 2 way flow)

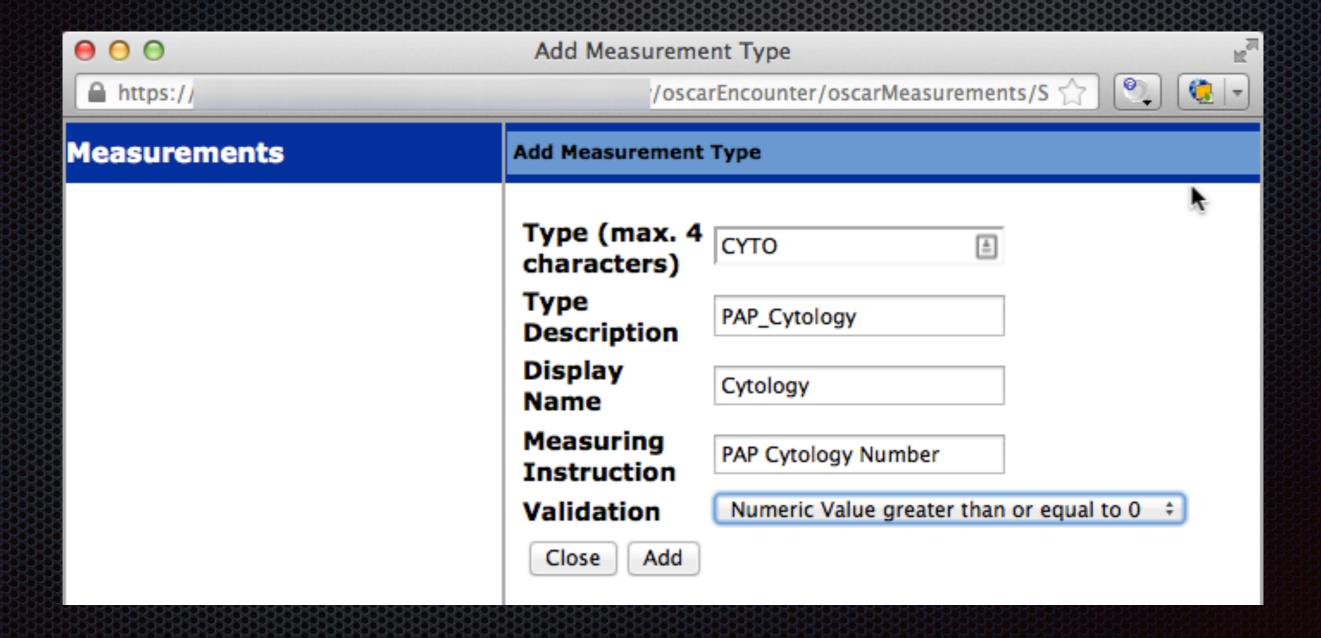
requires use of Database Tags

#### Examples include:

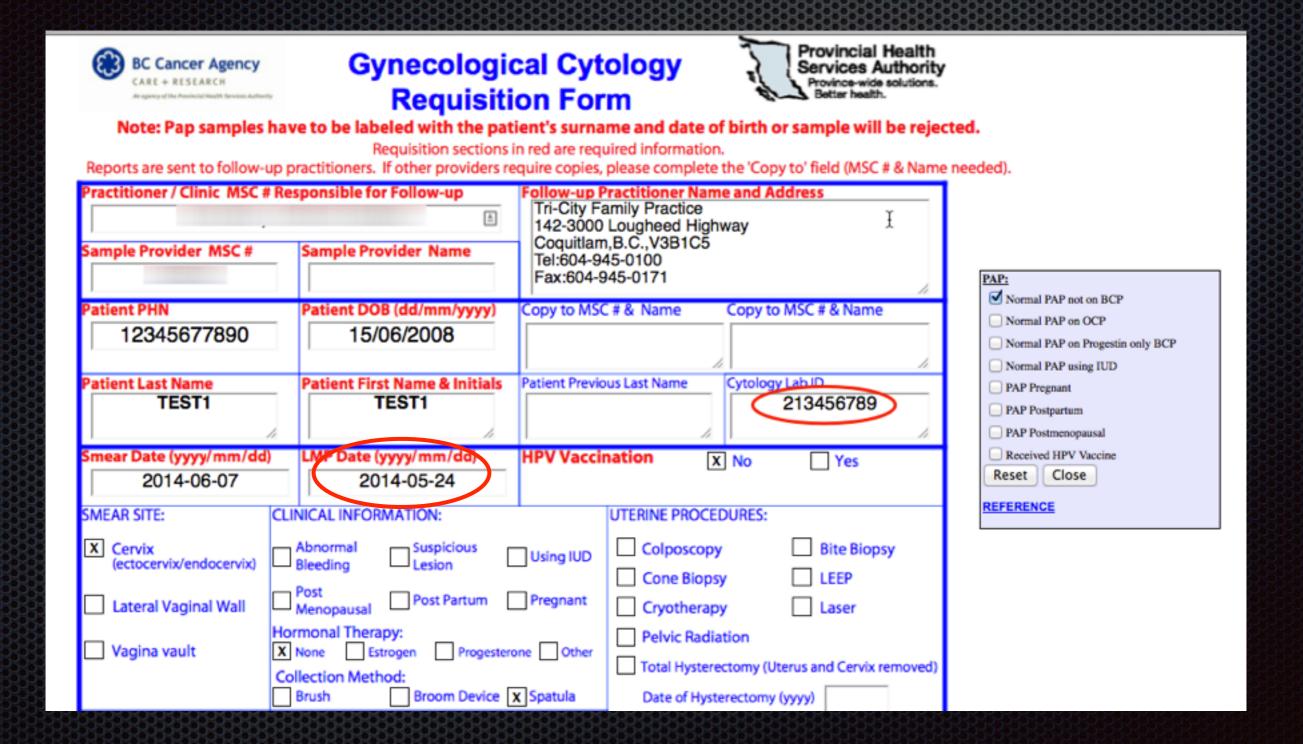
- Obstetrical measures (Gravida, Para, Abortions, LMP, EDD)
- Cytology Identification Number (for PAP forms)

Use of PAP Cytology number and Last Menstrual Period

PAP Cytology Identification Number



```
... 0.2 07-Jun-2014
Allergy 1
                        0.2 07-Jun-2014
Last Menstral ... 2014-05-24 0 - Jun-2014
                      ... 42 01-Jun-2014
Waist Circ.
                     ... 6.7 21-Apr-2014
A1C
Body Mass Index
                    ... 21.5 21-Apr-2014
                     ... 167 21-Apr-2014
HT
                     ... 278 21-Apr-2014
Waist
                      ... 60 21-Apr-2014
WT
                 ... 125/99 05-Feb-2014
BP
             ... 2013-12-06 31-Aug-2013
EDC
GAD7 Anxiety Score
                       ... 6 11-Jun-2013
PHQ9 Score
                       ... 9 11-Jun-2013
EDD
                     96-05 09-Jun-2013
PAP_Cytology ... 213456789 2-Apr-2013
                 ... 9 09-Apr-2013
Fragnity Index
EGFR
                     ... 66 11-May-2012
```



## Deleting Measurement Data



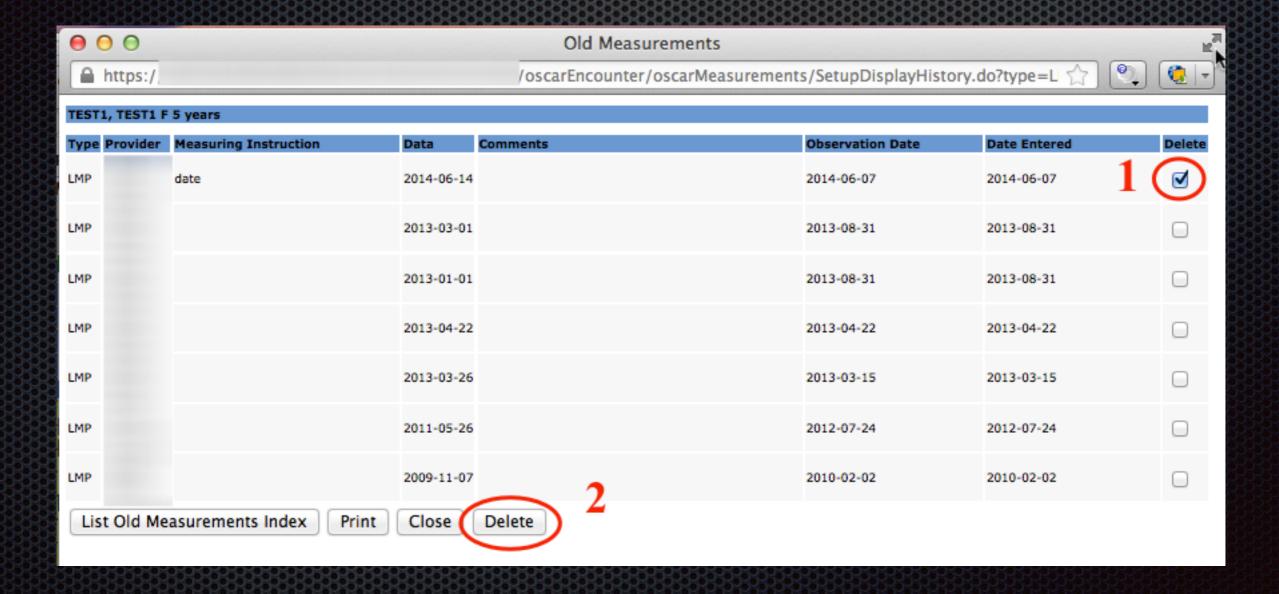
## Deleting Measurement Data

Click on Measurement Data you wish to delete

```
Measurements
                                       ٠
CDM Indicators
INR Flowsheet
Heart Failure Flowsheet
Hypertension Flowsheet
Diabetes Flowsheet
Allergy 1
                      ... 0.2 07-Jun-2014
Allergy 2
Last Menstral ... 2014-06-14 07-Jun-2014
Waist Circ.
                         42 01 Jun-2014
A1C
                     ... 6.7 21-Apr-2014
Body Mass Index
                    ... 21.5 21-Apr-2014
HT
                     ... 167 21-Apr-2014
Waist
                     ... 278 21-Apr-2014
WT
                      ... 60 21-Apr-2014
BP
                 ... 125/99 05-Feb-2014
EDC
             ... 2013-12-06 31-Aug-2013
GAD7 Anxiety Score
                       ... 6 11-Jun-2013
PHQ9 Score
                       ... 9 11-Jun-2013
EDD
             ... 2013-06-05 09-Jun-2013
PAP_Cytology ... 213456789 22-Apr-2013
Fragility Index
                       ... 9 09-Apr-2013
```

## Deleting Measurement Data

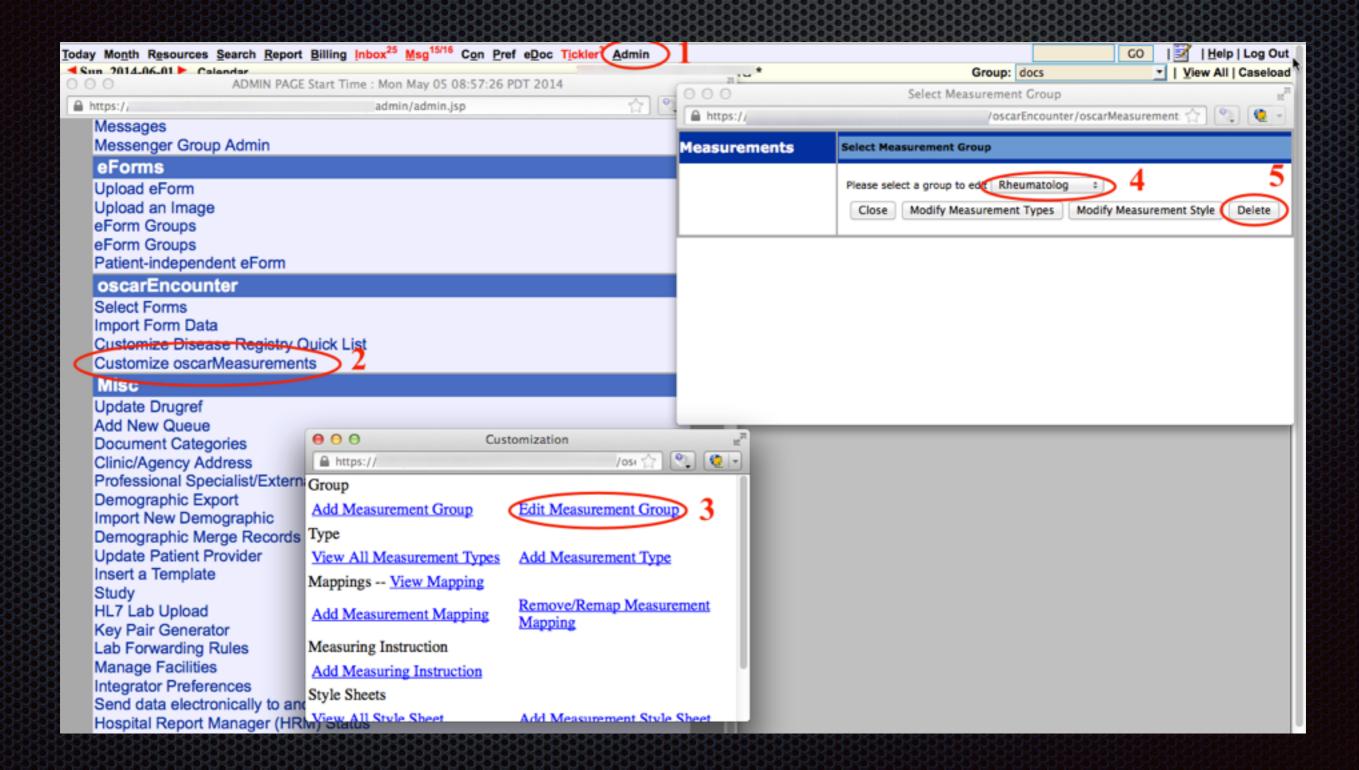
Check the Delete box on the far right; then Delete



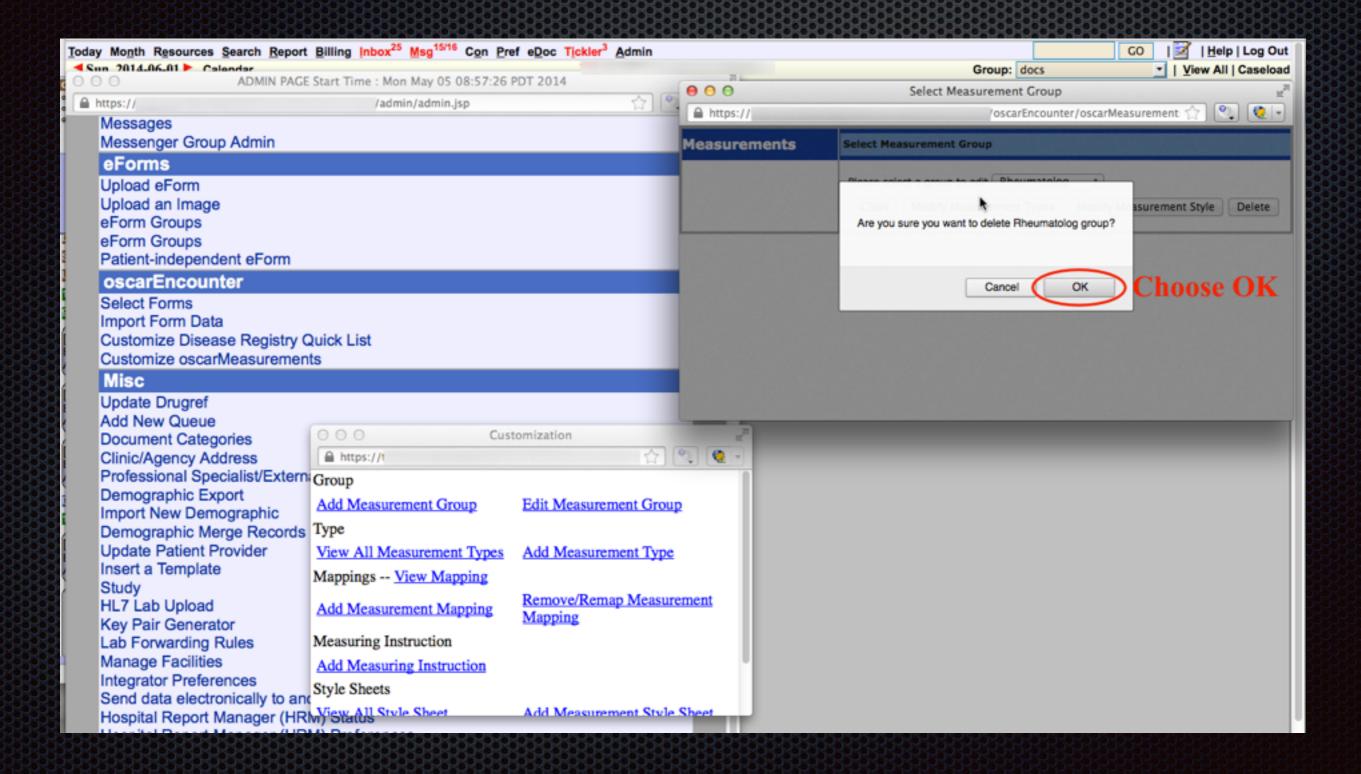
# Deleting Measurement Groups



# Deleting Measurement Groups



# Deleting Measurement Groups



# How are Measurements populated?

- Manually
  - Measurement Groups
  - Chronic Disease Flow sheets
  - eForms
- Automatically
  - Laboratory uploads

# Automatic Measurement Entry

Requires Measurement Mapping

- Necessary before lab measurements are tracked
- Only tracks lab values imported after you have mapped the measurement

- Find the HL7 identifier of the lab value you want to map
- The HL7 identifier is also known as the LOINC code
- LOINC = Logical Observation Identifiers Names and Codes

Open a lab result

Find the HL7 identifier of the lab value you want to map

CHEM4				
Test Name(s)	Result	Abn	Reference Range	Units
Glucose Random info	11.6	н	3.6-7.8	mmol/L
Sodium info	141	N	135-145	mmol/L
Potassium info Hover over the	lah 3.3	L	3.5-5.0	mmol/L
Chloride	106	N	98-108	mmol/L
Bicarbonate and look for the	e HL / 23	N	20-30	mmol/L
Anion Gap identifier here	12	N	3-16	mmol/L
Serum Osmolality	300	нн	275-295	mosm/kg
*CRITICAL VALUE				
javascript:popupStart('660','900','/ON/labValues.jsp?tes	7&identifier=2075-0')	mosm/kg		

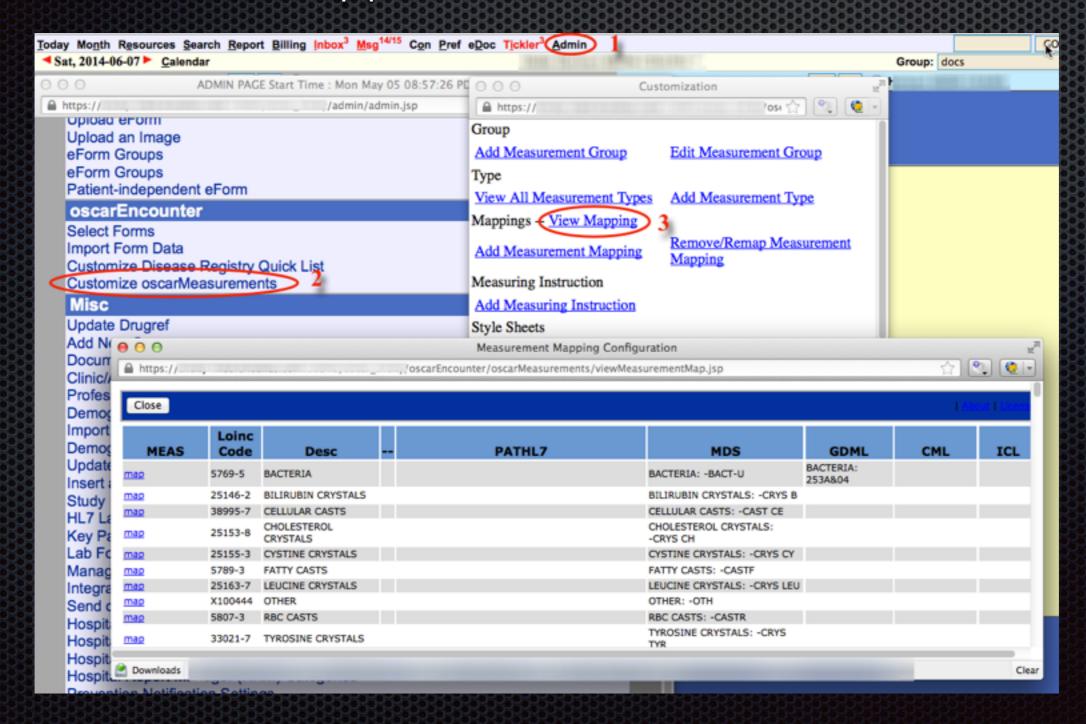
Open a lab result

Find the HL7 identifier of the lab value you want to map

CHEM4				
Test Name(s)	Result	Abn	Reference Range	Units
Glucose Random info	11.6	Н	3.6-7.8	mmol/L
Sodium info	141	N	135-145	mmol/L
Potassium info Hover over the	lah 3.3	L	3.5-5.0	mmol/L
Chloride	106	N	98-108	mmol/L
Bicarbonate and look for th	e HL /	N	20-30	mmol/L
Anion Gap identifier here	12	N	3-16	mmol/L
Serum Osmolality	300	нн	275-295	mosm/kg
*CRITICAL VALUE				
javascript:popupStart('660','900','/ON/labValues.jsp?tes	7&identifier=2075-0')	mosm/kg		

In this example, the HL7 identifier for Chloride is 2075-0

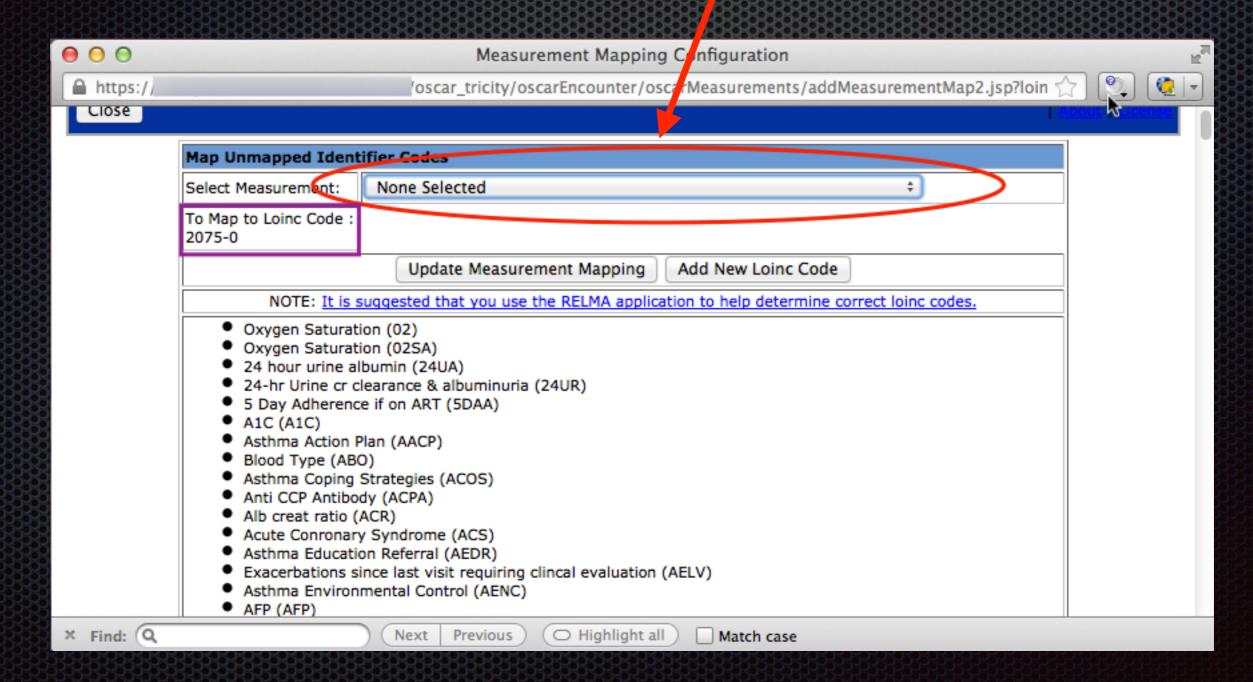
#### View all the Mapped Measurements



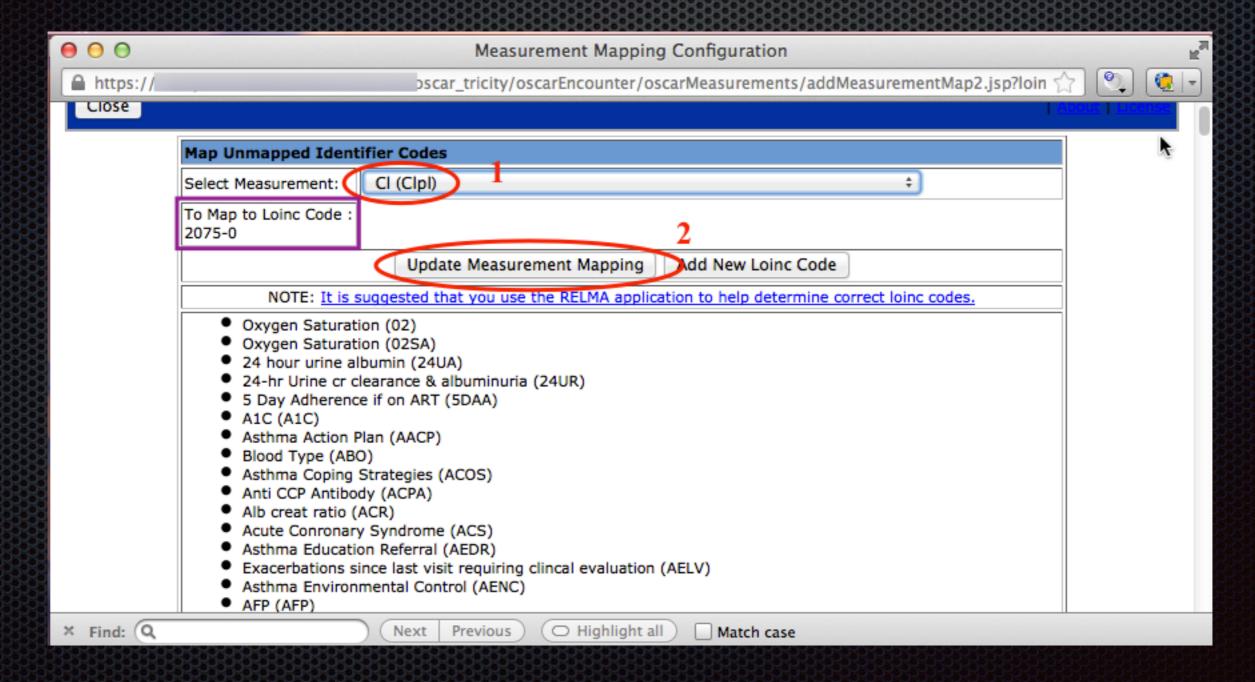
Find the Lab Measurement of interest (2075-0) (try Ctrl-F or Cmd-F with HL7 identifier)

•	00			Measurement Mapping Config	guration				K
	https://	ttps:// /oscarEncounter/oscarMeasurements/viewMeasurementMap.jsp				☆	(C)	2 -	
	map	16601-7	Nucleic Acid Amplification	Chlamydia trachomatis Nucleic Acid Amplification: 16601-7					Π,
	map	16600-9	Chlamydia trachomatis Nucleic Acid Amplification	Chlamydia trachomatis Nucleic Acid Amplification: 16600-9					
	map	21613-5	Chlamydia trachomatis Nucleic Acid Amplification	Chlamydia trachomatis Nucleic Acid Amplification: 21613-5					
	map	173-5	Chloramphenicol	Chloramphenicol: 173-5					
	<u>map</u>	2075-0	Chloride	Chloride: 2075-0	CHLORIDE: -CL	Chloride: 053M	Chloride: 3230		
	LIDI S TC/HDL:	9322-9	Chol/HDL (Risk Ratio)	Chol/HDL (Risk Ratio): 9322-9	CHOLESTEROL/HDL RATIO: -HDLRAT	RATIO AND RISK FACTOR: R/RM	CHOL/HDL RATIO: 3939	LIPIDS TC/HDL: TCHOL	
	TC/HDL: JCHD	32309-7	Chol/HDL Risk Ratio	Chol/HDL Risk Ratio: 32309-7					
	Total Cholesturol: TCHL	14647-2	Cholesterol	Cholesterol: 14647-2	CHOLESTEROL: -CHOL	Cholesterol: 055M	CHOLESTEROL: 3120	Total Cholestorol: CHO	:
}	map	85-9	Ciprofloxacin	Ciprofloxacin: 185-9	CIPROFLOXACIN: -CIPROFL				
	CK: CK	21.7-6	СК	CK: 2157-6		CK: 066M			
	man	189-	Clarithromycin	Clarithromycin: 189-1					
>	Find: Q 2075-	ol	Next Previous	us					

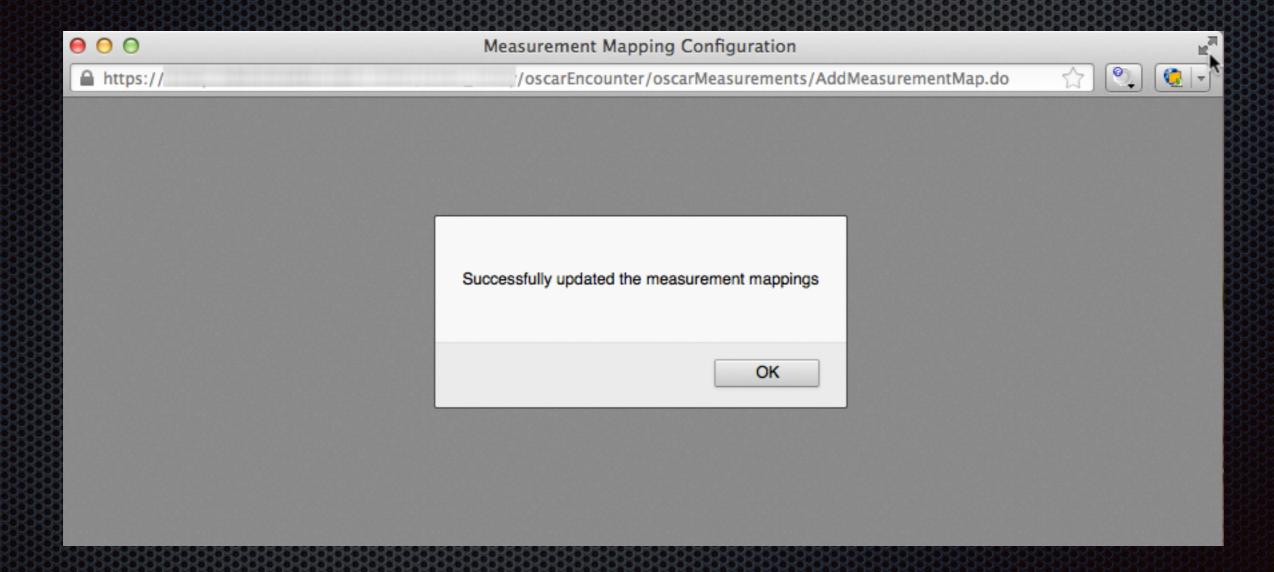
Select Measurement from Dropdown box



#### Select Update Measurement Mapping



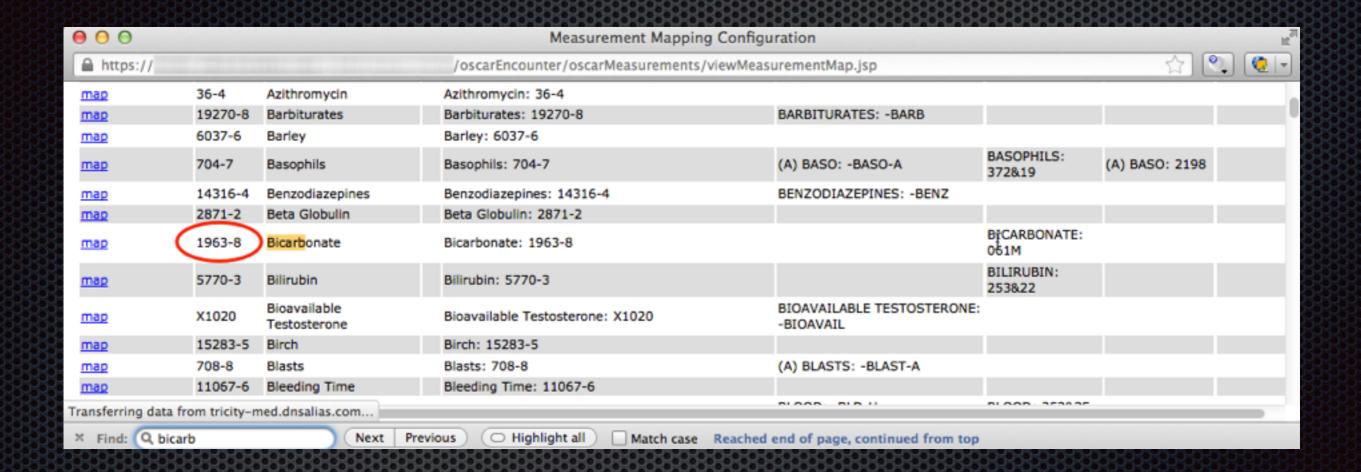
# Measurement Mapping



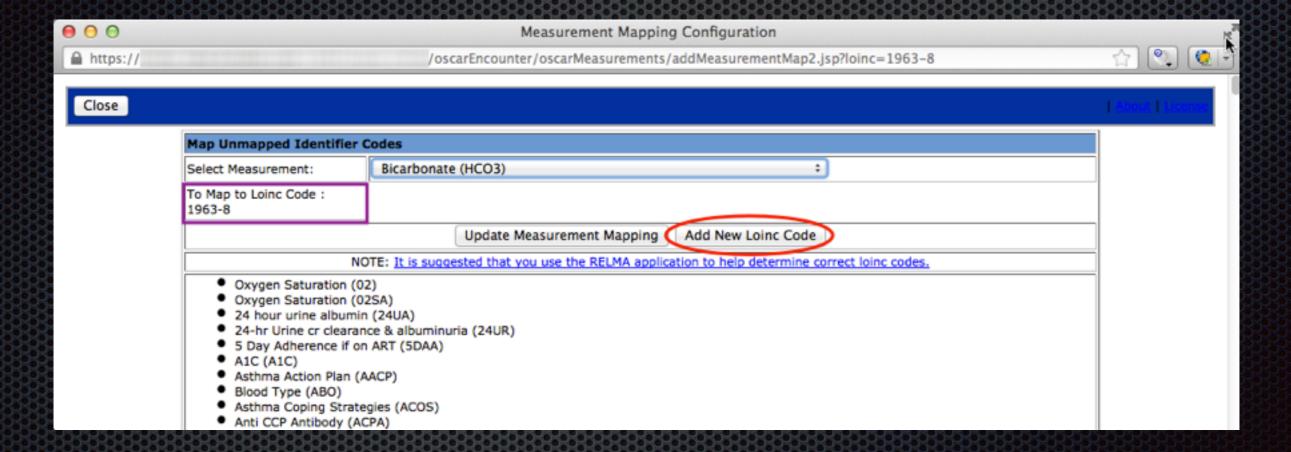
Find the HL7 identifier of the lab value you want to map

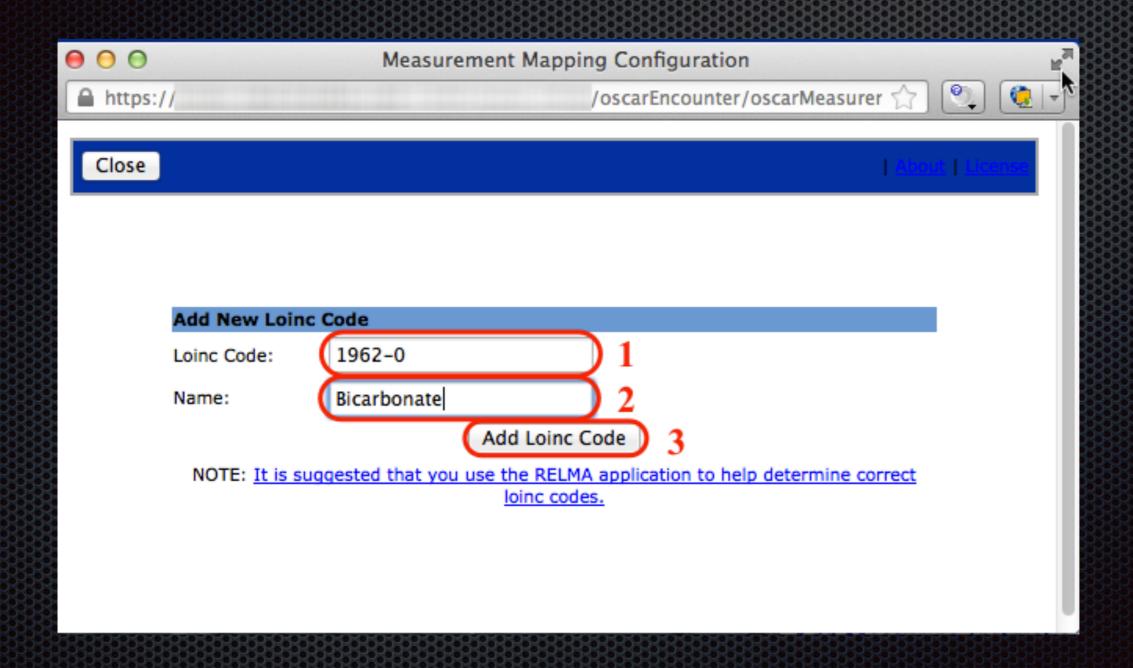
(	CHEM4									
	Test Name(s)	Result		Abn	Reference Range	Units				
G	lucose Random info		11.6	н	3.6-7.8	mmol/L				
<u>s</u>	odium info		141	N	135-145	mmol/L				
<u>P</u>	otassium info		3.3	L	3.5-5.0	mmol/L				
<u>c</u>	Hover the mouse over the lab				98-108	mmol/L				
В	and look for the H	I.7 identifier here	23	N	20-30	mmol/L				
	nion Gap	E7 identifier fiere	12	N	3-16	mmol/L				
<u>s</u>	erum Osmolality		360	нн	275-295	mosm/kg				
-	javascript:popupStart('660','900','/ON/labValues.jsp?testName=Bicarbonate&demo=2562&labType=HL7&identifie									

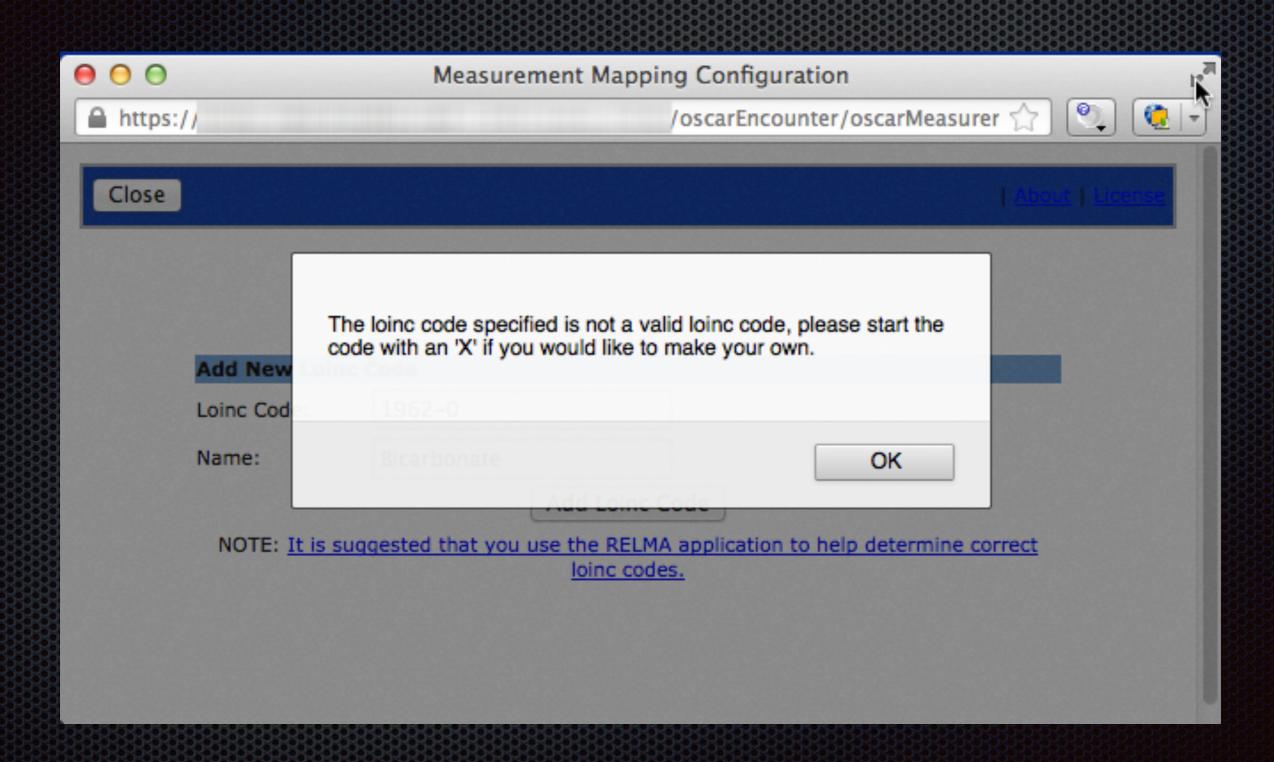
In this example, the HL7 identifier for Bicarbonate is 1962-0



The LOINC code listed for Bicarbonate does not match the HL7 code from the lab (1962-0)









# KEEP CALM AND WHO YOU GONNA CALL?

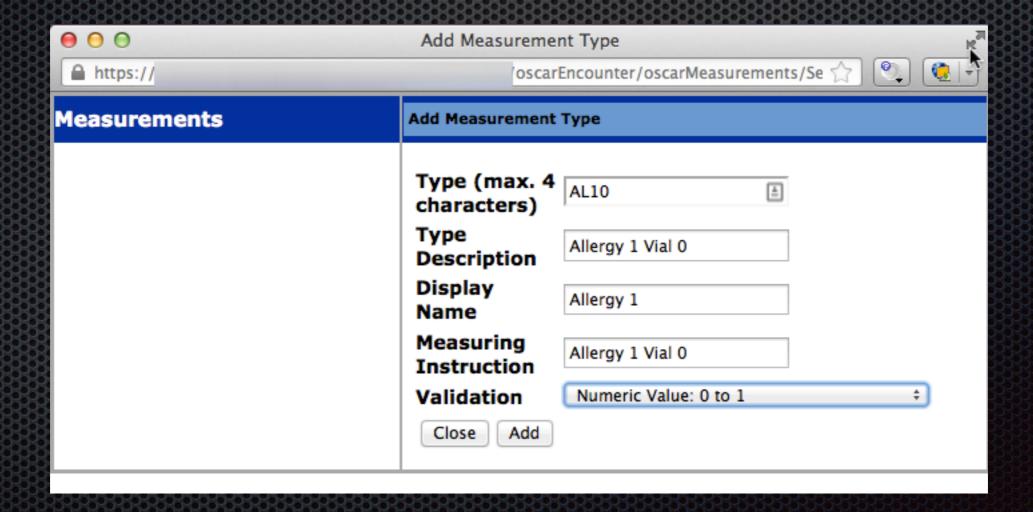


Call your OSP to add this "under the hood"

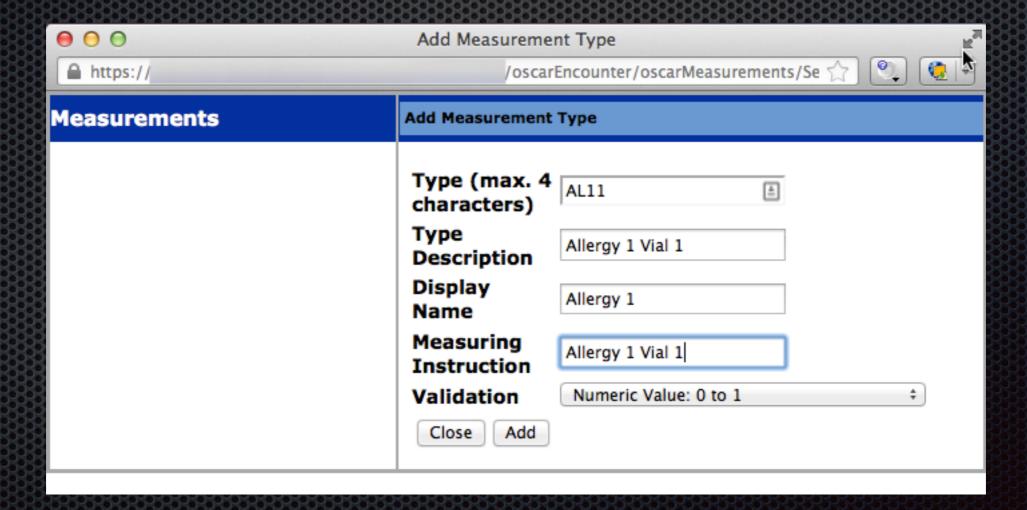


Measurements can be used to track Allergy shots

First create the following Allergy Types



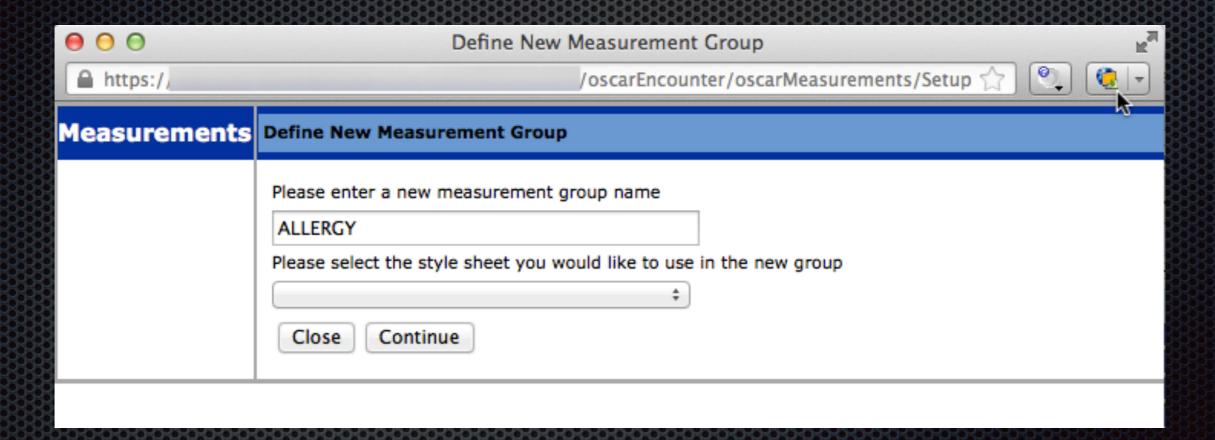
Keep adding Allergy Types



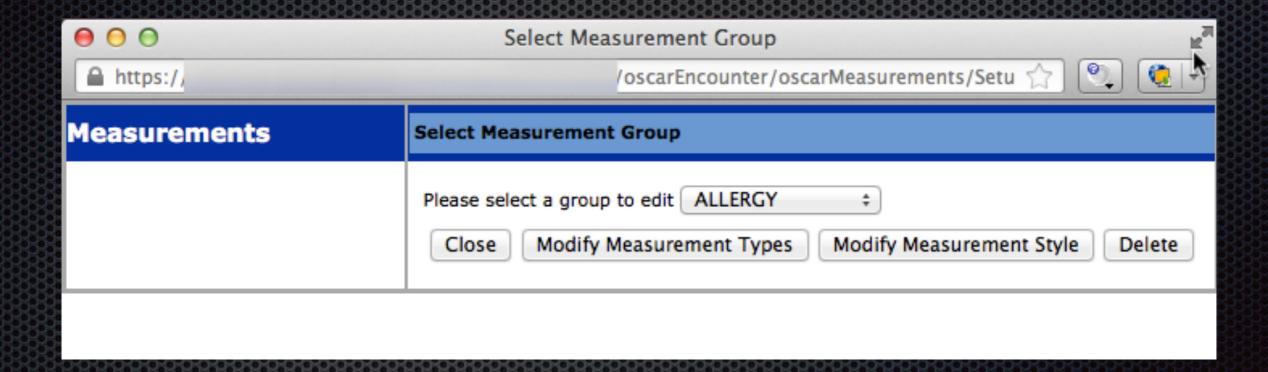
Repeat adding Allergy Types as shown below

0 0			Display Mea	asurement Types				
https://	oscarEncounter/oscarMeasurements/SetupDisplayMeasure							
	TYPE	DISPLAY NAME	TYPE DESCRIPTION	MEASURING INSTRUCTION	VALIDATION			
	AL10	Allergy 1	Allergy 1 Vial 0	Allergy 1 Vial 0	Numeric Value: 0 to 1			
	AL11	Allergy 1	Allergy 1 Vial 1	Allergy 1 Vial 1	Numeric Value: 0 to 1			
	AL12	Allergy 1	Allergy 1 Vial 2	Allergy 1 Vial 2	Numeric Value: 0 to 1			
	AL13	Allergy 1	Allergy 1 Vial 3	Allergy 1 Vial 3	Numeric Value: 0 to 1			
	AL14	Allergy 1	Allergy 1 Vial 4	Allergy 1 Vial 4	Numeric Value: 0 to 1			
	AL15	Allergy 1	Allergy 1 Vial 5	Allergy 1 Vial 5	Numeric Value: 0 to 1			
	AL20	Allergy 2	Allergy 2 Vial 0	Allergy 2 Vial 0	Numeric Value: 0 to 1			
	AL21	Allergy 2	Allergy 2 Vial 1	Allergy 2 Vial 1	Numeric Value: 0 to 1			
	AL22	Allergy 2	Allergy 2 Vial 2	Allergy 2 Vial 2	Numeric Value: 0 to 1			
	AL23	Allergy 2	Allergy 2 Vial 3	Allergy 2 Vial 3	Numeric Value: 0 to 1			
	AL24	Allergy 2	Allergy 2 Vial 4	Allergy 2 Vial 4	Numeric Value: 0 to 1			
	AL25	Allergy 2	Allergy 2 Vial 5	Allergy 2 Vial 5	Numeric Value: 0 to 1			
	AL30	Allergy 3	Allergy 3 Vial 0	Allergy 3 Vial 0	Numeric Value: 0 to 1			
	AL31	Allergy 3	Allergy 3 Vial 1	Allergy 3 Vial 1	Numeric Value: 0 to 1			
	AL32	Allergy 3	Allergy 3 Vial 2	Allergy 3 Vial 2	Numeric Value: 0 to 1			
	AL33	Allergy 3	Allergy 3 Vial 3	Allergy 3 Vial 3	Numeric Value: 0 to 1			
	AL34	Allergy 3	Allergy 3 Vial 4	Allergy 3 Vial 4	Numeric Value: 0 to 1			
	AL35	Allergy 3	Allergy 3 Vial 5	Allergy 3 Vial 5	Numeric Value: 0 to 1			

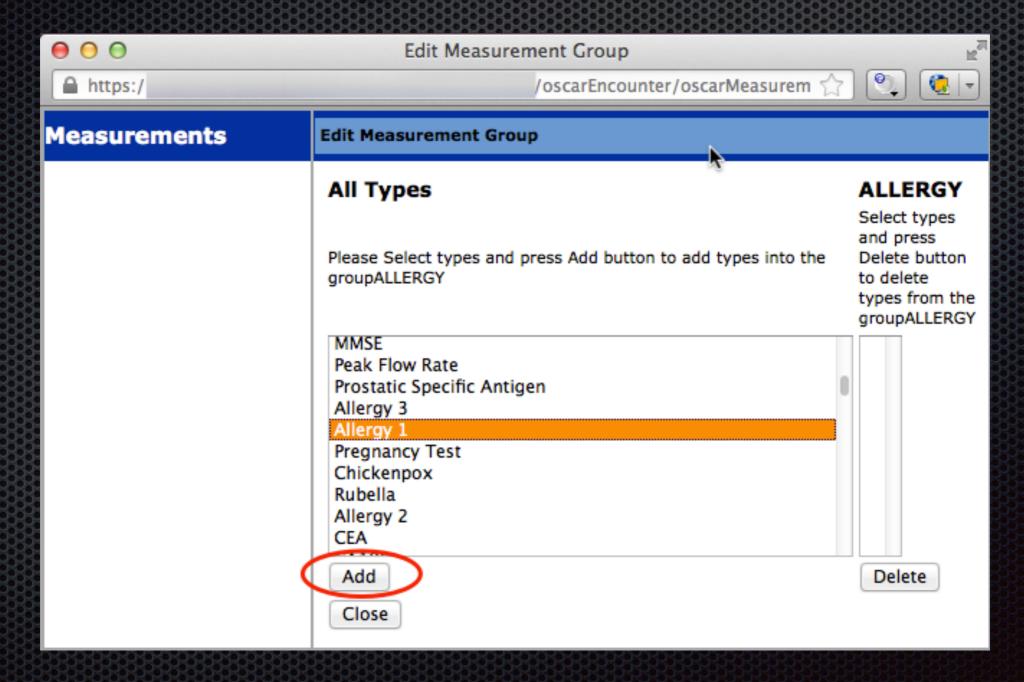
Create New Allergy Group



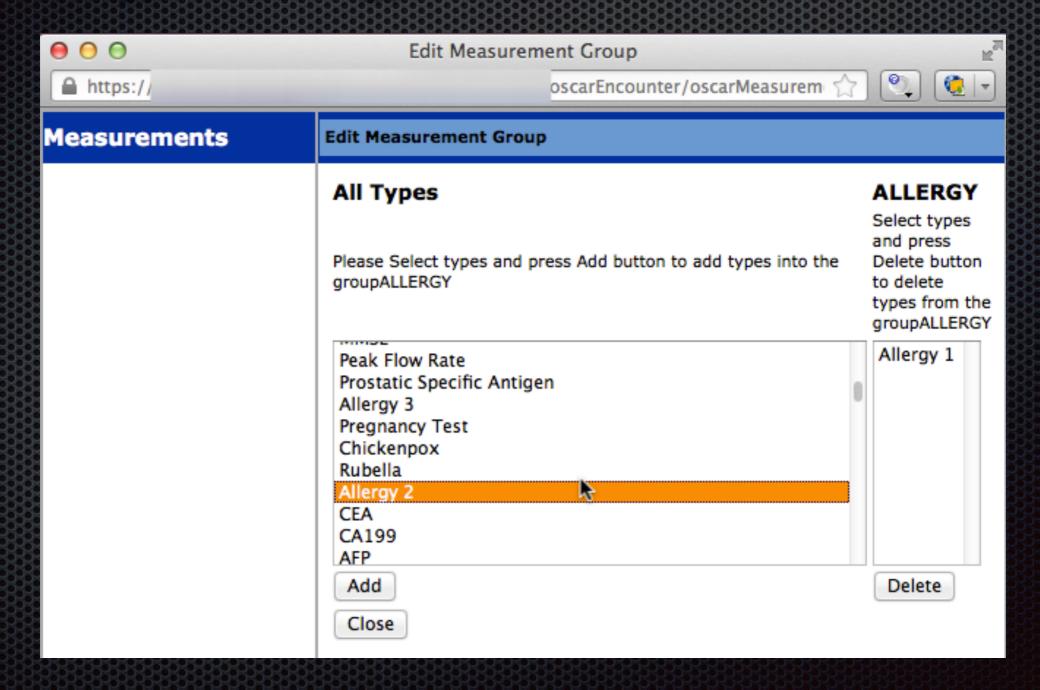
Edit Allergy Group



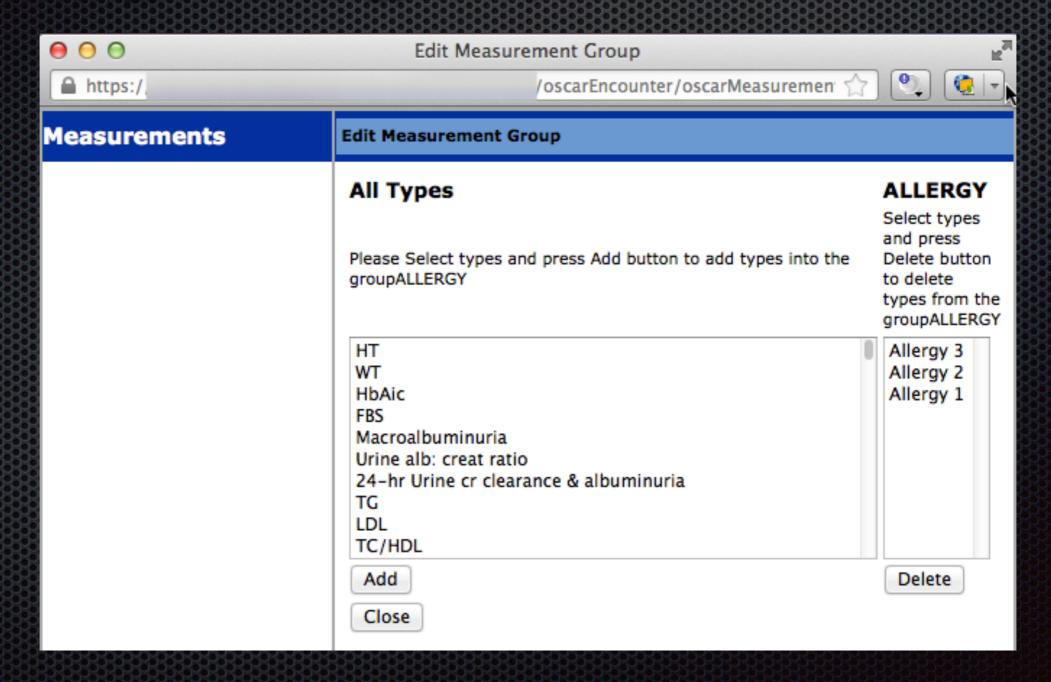
Add Allergy 1 to Allergy Group



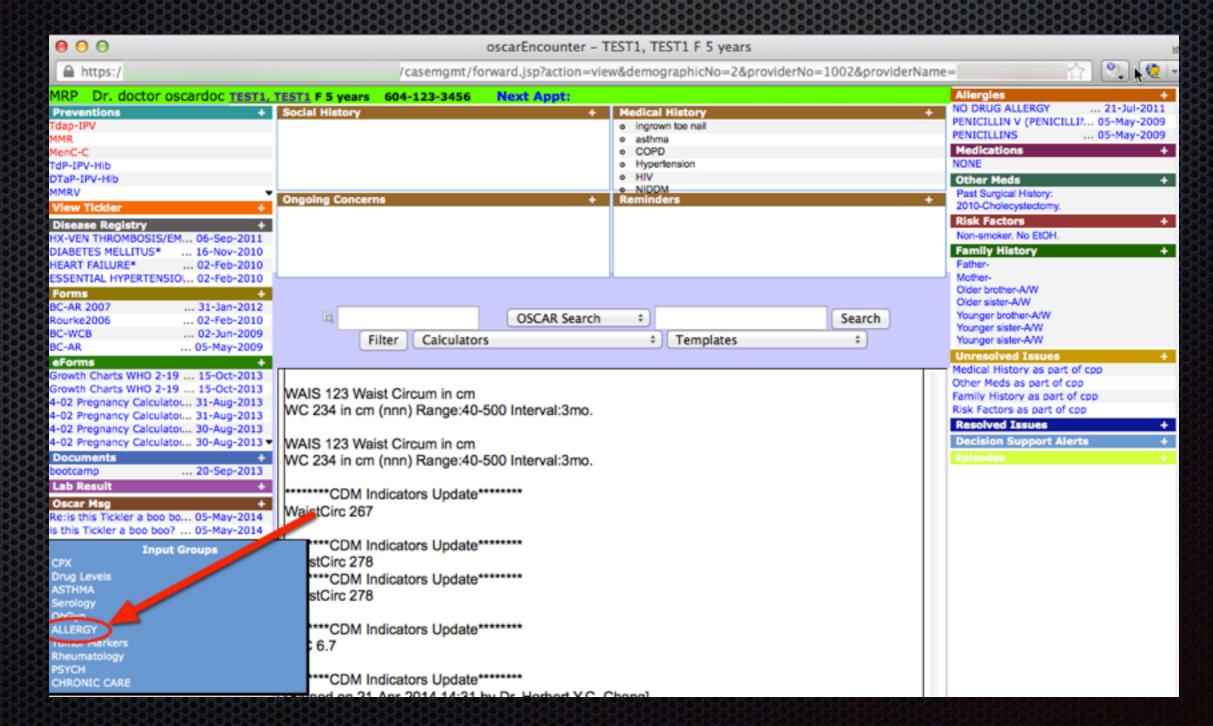
Add Allergy 2 to Allergy Group



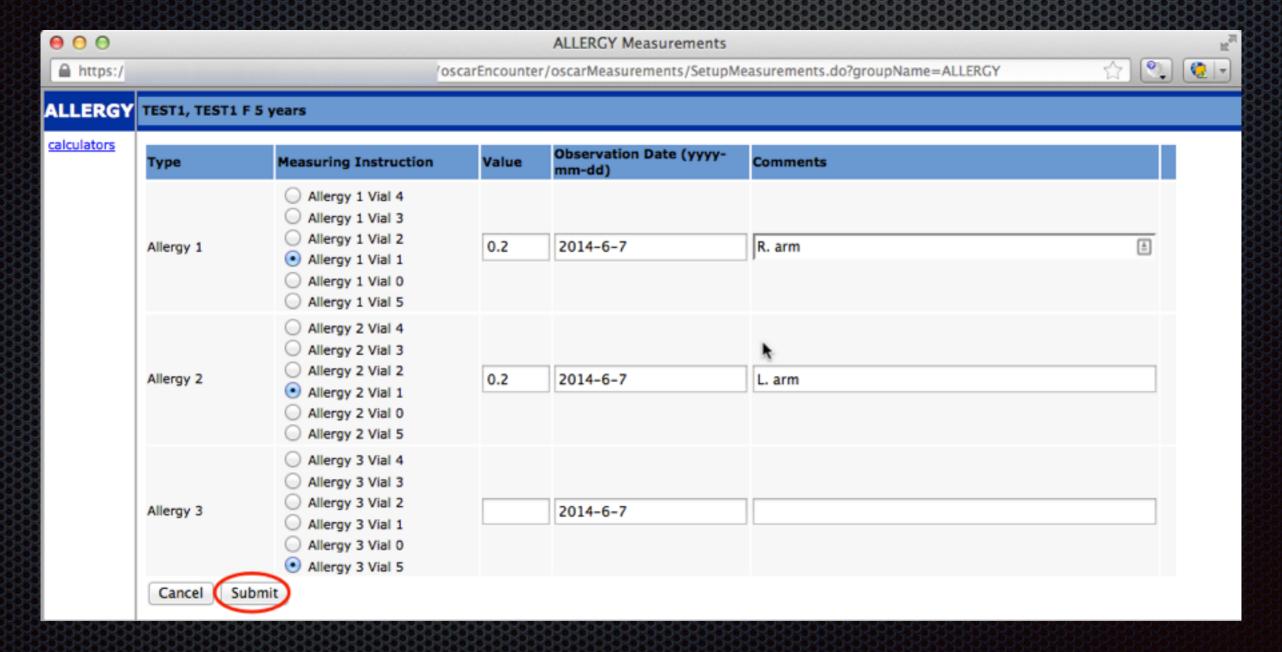
#### Add Allergy 3 to Allergy Group



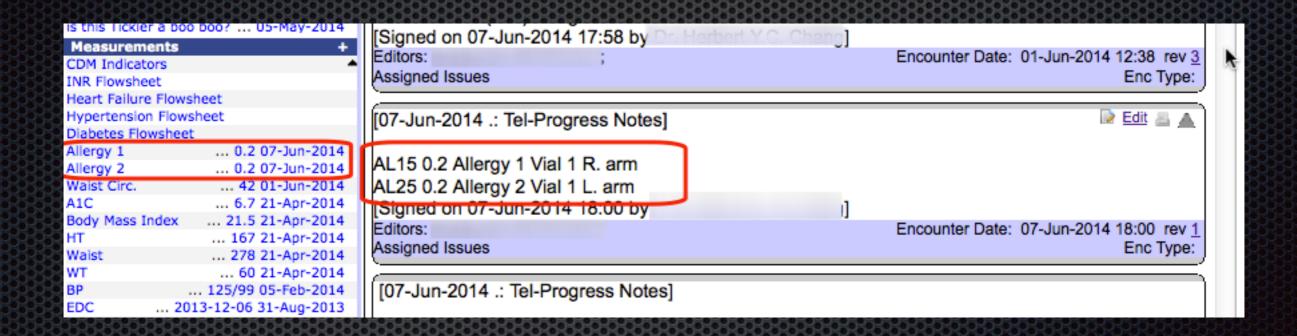
Hover over "+" and choose ALLERGY from patient chart



#### Enter allergy shot information



Allergy shot information is saved in clinical notes



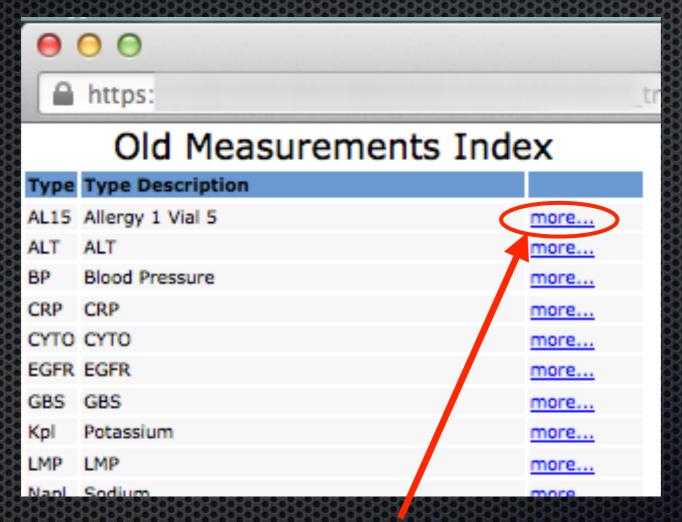
Allergy shot information can be printed for allergist

```
Re:Re:Need CON to ALL plc... 15-Jul-2013
Re: Need CON to ALL please... 12-Jul-2013
                                        Plan:
                       ... 05-Jul-2013 v
Need CON to ALL please
                                         TECTA 40MG Take 1 Tabs PO OD for 90 Days Qty:90 Repeats:0
Measurements
CDM Indicators
                  ... 0.50 05-Jun-2014
Allergy 1
                                        AL15 0.50 Allergy 1 Vial 3 R. arm Next dose in 2-3 weeks
GBS
                                         [Signed on 05-Jun-2014 18:22 by
th of: Normal respiratory flora 03-Jun-2014
                                         Editors: (
                                                                                                               Enco
                ... 100/50 06-Mar-2014
                                         Assigned Issues
                                                                                                            Enc Typ
PAP_Cytology ... 16698083 06-Mar-2014
Last Menstral Period... 2010 06-Mar-2014 

Consultations
                                         [05-Jun-2014 .: al. shot]
```

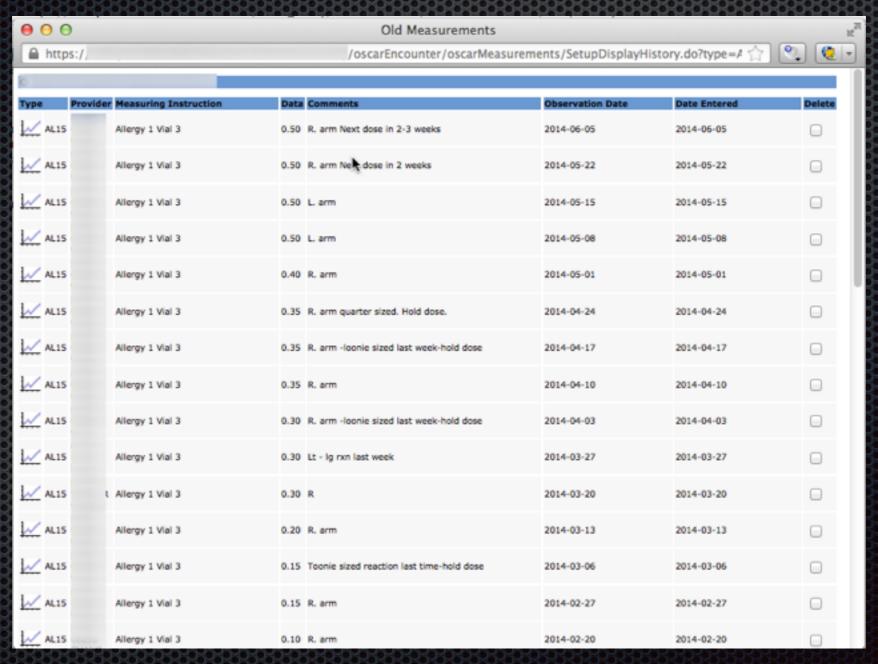
Click on Measurements in Header

Allergy shot information can be printed for allergist



Click on more...

Allergy shot information can be printed for allergist



Scroll to bottom of list

Allergy shot information can be printed for allergist



#### Click on Print

Send printout as document to attach to consult