A patient required urgent Factors XII, XI, IX and VIII.

Plasmas were carefully reconstituted and aliquoted to labelled microcups in the order FVIII, FIX, FXI, FXII.

Whilst loading onto Maxine the microcups are now noted to be in the order FIX, FVIII, FXI, FXII.

OH-oh ?I have swapped FVIII and FIX deficient plasma.

This is a query factor deficiency or query inhibitor.

What will Maxine say?

How will I know?

Will the QC be in but the patient result wrong?

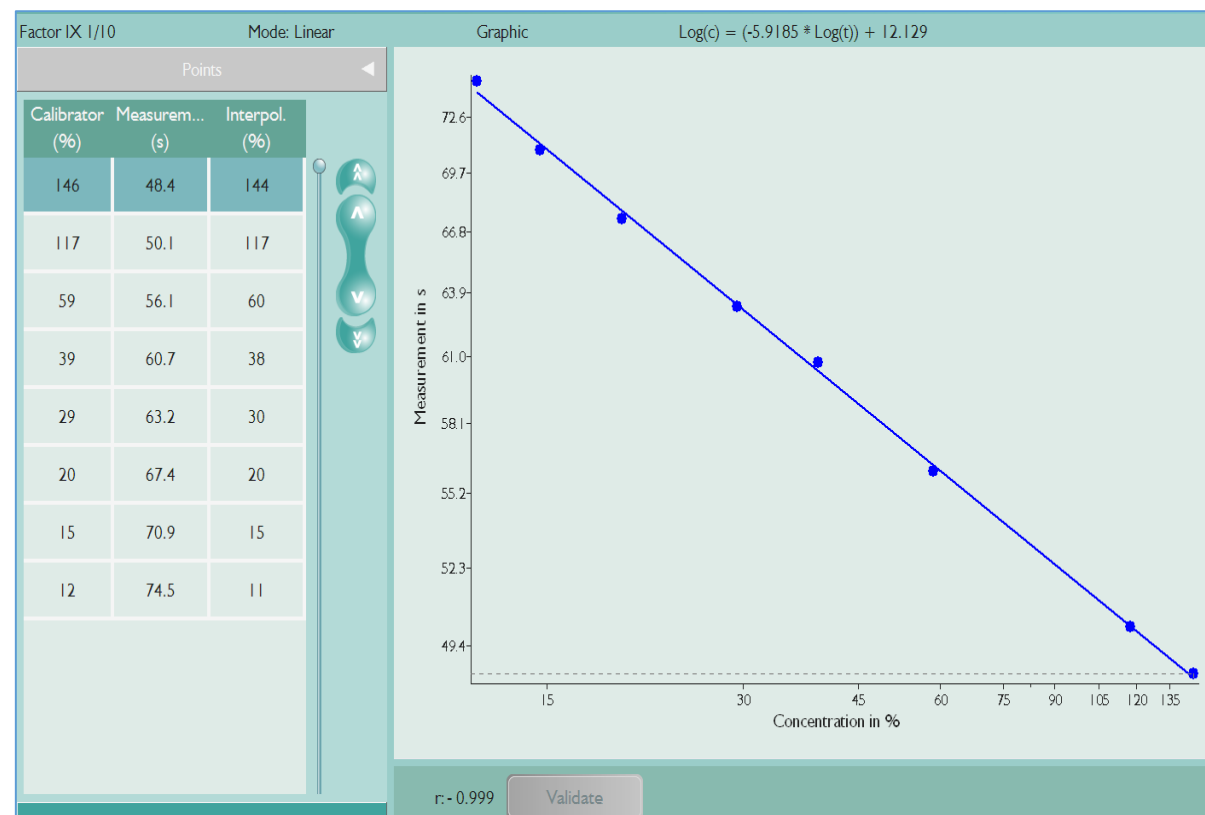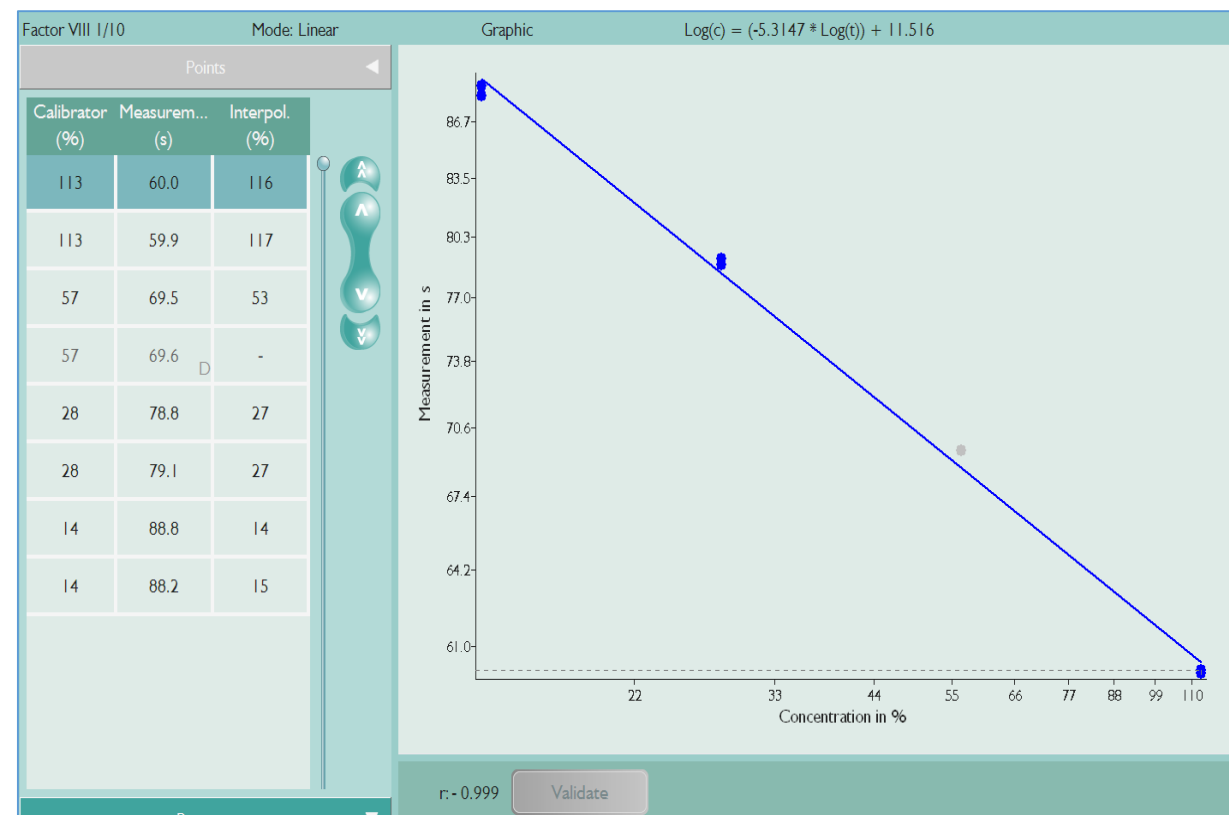|						
FI I	STA-SYST CONT N	22/11/19 11:28		To be validated	106	[75 - 103] %
FI I	STA-SYST CONT P	22/11/19 11:29		Valid	45	[33 - 47] %
F12	STA-SYST CONT N	22/11/19 11:29		Valid	107	[81 - 111] %
F12	STA-SYST CONT P	22/11/19 11:29		Valid	54	[42 - 60] %
F8	STA-SYST CONT N	22/11/19 11:26		To be validated	326	[88 - 124] %
F8	STA-SYST CONT P	22/11/19 11:27		To be validated	153	[36 - 52] %
F9	STA-SYST CONT N	22/11/19 11:27		To be validated	35	[101 - 141] %
F9	STA-SYST CONT P	22/11/19 11:28		To be validated	15	[42 - 60] %

Sure enough the QC is out
FVIII both levels of QC are high
FIX both levels of QC are low
The FXI normal QC is just high and the factor XII QC is ok, further supporting a deficient plasma swap and not a QC swap or QC reconstitution issue.

But why………?
Shouldn't they be normal?

Factor VIII

Factor VIII 1/10 — Mode: Linear — Graphic — $\log(c) = (-5.3147 * \log(t)) + 11.516$

Calibrator (%)	Measurem... (s)	Interpol. (%)
113	60.0	116
113	59.9	117
57	69.5	53
57	69.6 D	-
28	78.8	27
28	79.1	27
14	88.8	14
14	88.2	15

r: - 0.999 Validate

Factor IX

Factor IX 1/10 — Mode: Linear — Graphic — $\log(c) = (-5.9185 * \log(t)) + 12.129$

Calibrator (%)	Measurem... (s)	Interpol. (%)
146	48.4	144
117	50.1	117
59	56.1	60
39	60.7	38
29	63.2	30
20	67.4	20
15	70.9	15
12	74.5	11

r: - 0.999 Validate

The calibration curve for FVIII runs from 60 seconds to 88 seconds.

The calibration curve for FIX runs from 48 seconds to 75 seconds.

The seconds for the testing would be correct for the opposite calibration curve.

The QC is significantly different and will let you know if you have made up the wrong deficient plasma or swapped them.

Longer term the adoption of the Stago deficient plasmas would reduce transcription / loading errors.

F9	STA-SYST CONT P	22/11/19 12:10		Valid		48	[42 - 60] %
F9	STA-SYST CONT N	22/11/19 12:03		Valid		120	[101 - 141] %
FII	STA-SYST CONT N	22/11/19 12:03		Valid		96	[75 - 103] %
FII	STA-SYST CONT P	22/11/19 11:29		Valid		45	[33 - 47] %
F8	STA-SYST CONT P	22/11/19 12:02		Valid		45	[36 - 52] %
F8	STA-SYST CONT N	22/11/19 12:02		Valid		105	[88 - 124] %
F12	STA-SYST CONT P	22/11/19 11:29		Valid		54	[42 - 60] %
F12	STA-SYST CONT N	22/11/19 11:29		Valid		107	[81 - 111] %

The FVIII and FIX deficient plasmas were re-loaded on Maxine as the correct reagents.
- The FVIII and FIX QC returned to range
- The FXI returned to range simply by re-running.

(Handy hint #1 – Load the deficient plasmas in the corresponding drawer number)

(Handy hint #2 – If only running one patient, the only deficient plasmas you need to aliquot are the FVIII and FIX. Factors II, V, VII, X, XI and XII can be loaded in their vials as the dead volume and vial size is OK for 1 patient and QC.)