

Population pharmacokinetics for busy clinicians and active patients: how to get the most out of it?

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Disclosures

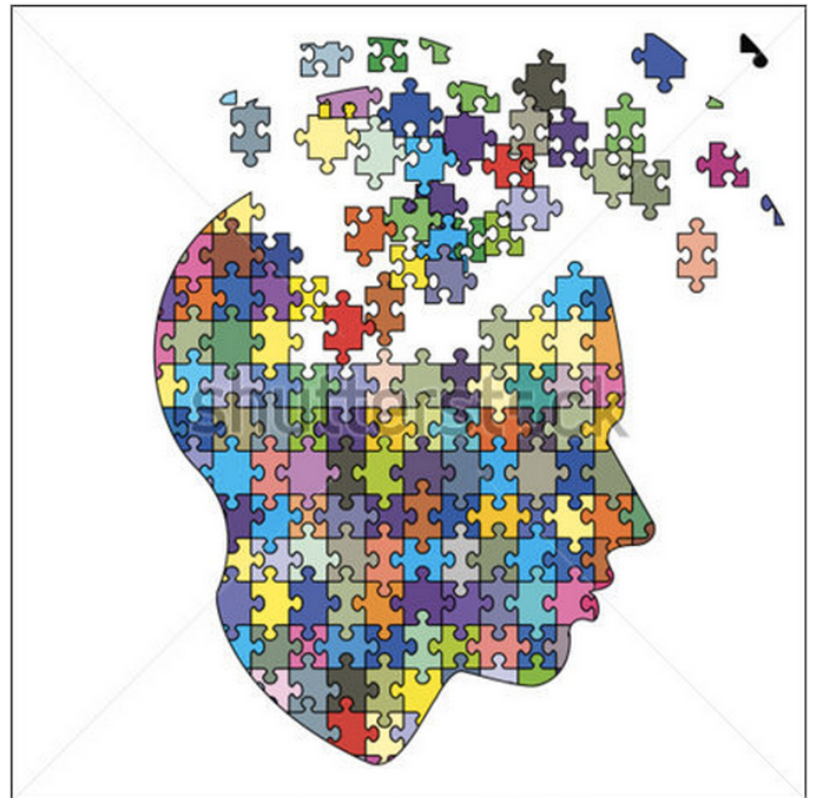
- Alfonso Iorio
 - research funding (Baxter, Bayer, Biogen Idec, NovoNordisk, Pfizer)
- WAPPS
 - B-CHERP funding, peer-reviewed grant from the Canadian Hemophilia Society, three years
 - Not supported by any industry funding

WAPPS: vision

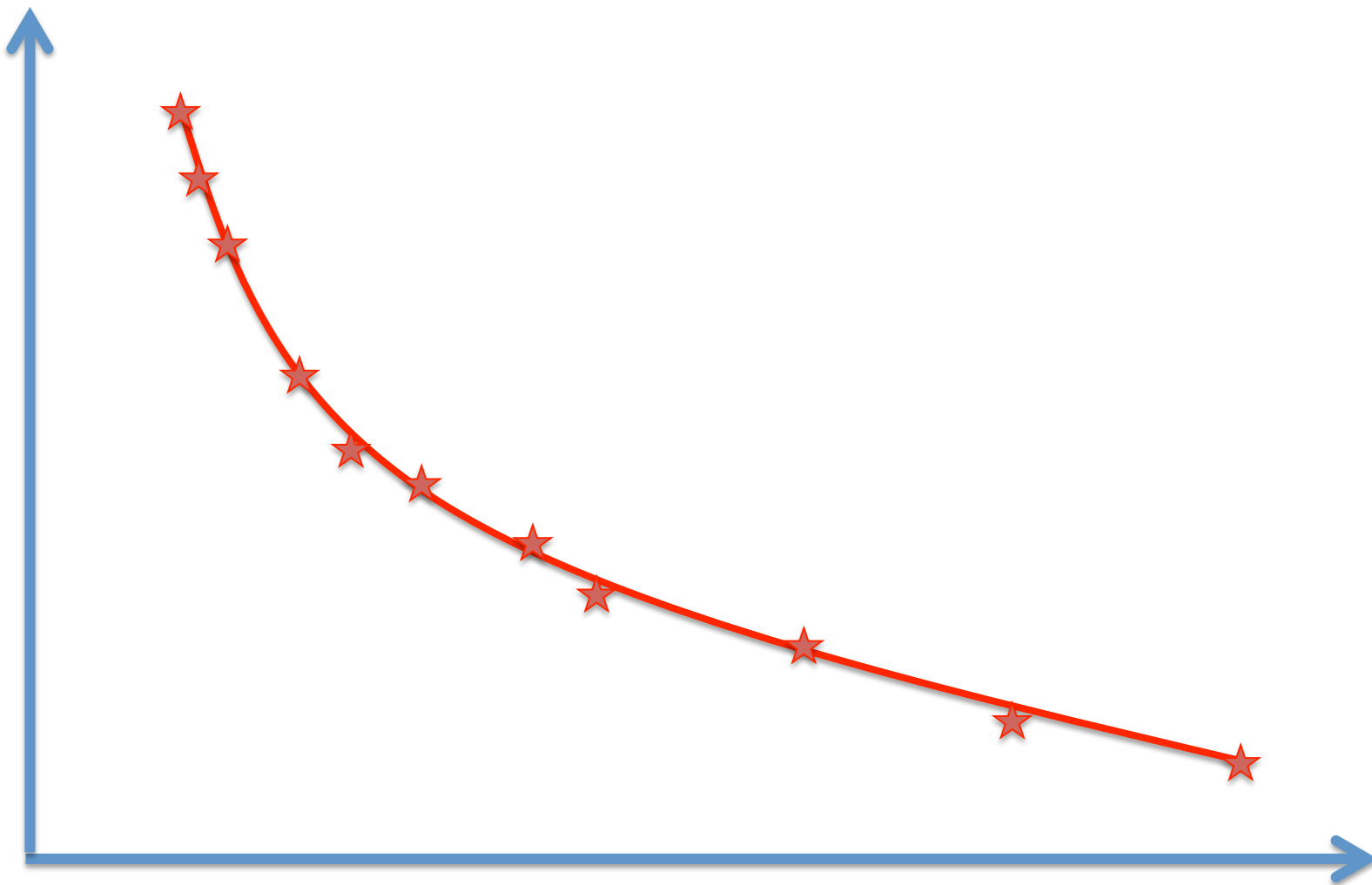


Solution:
Population PK

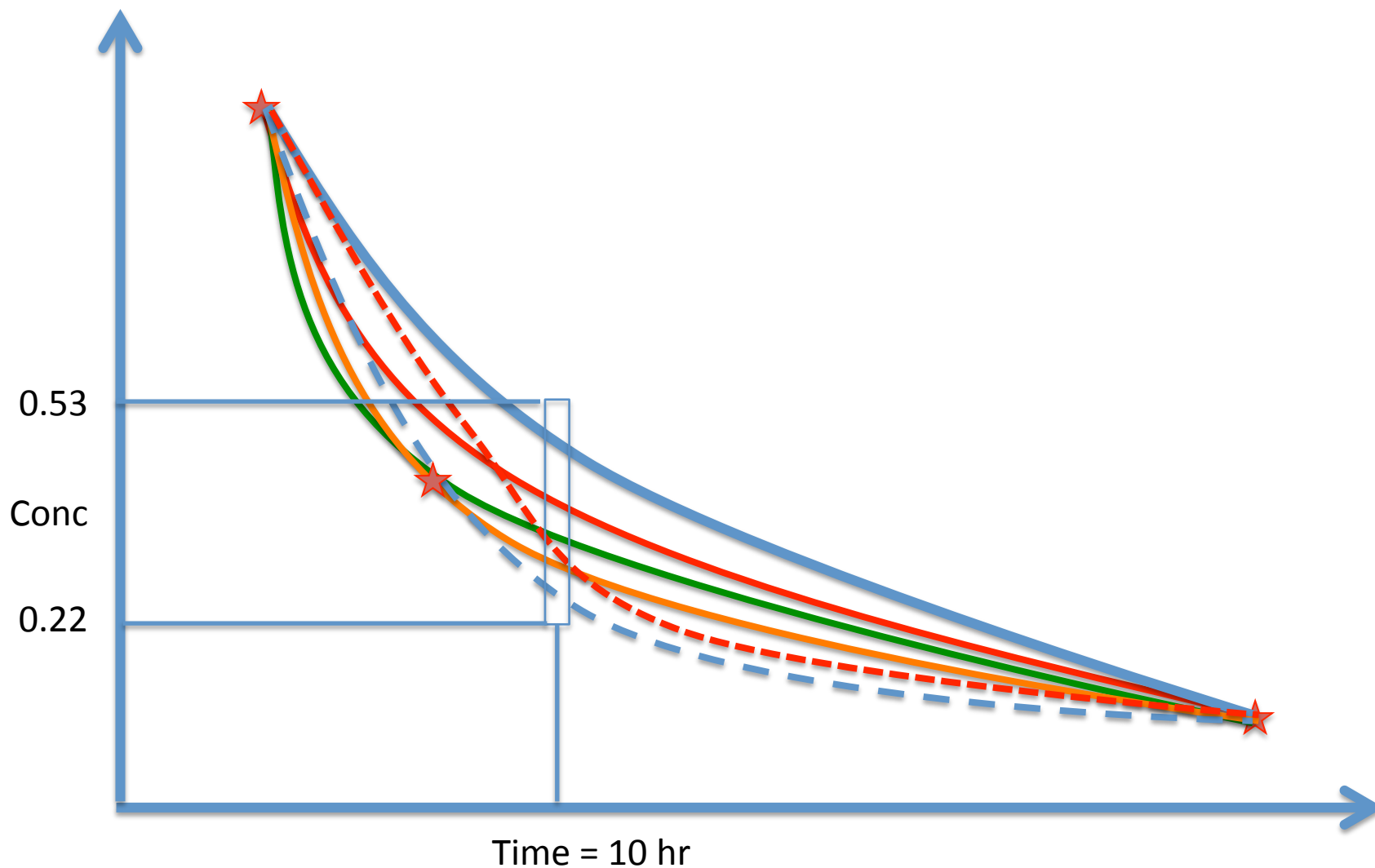
Barrier:
Number of samples



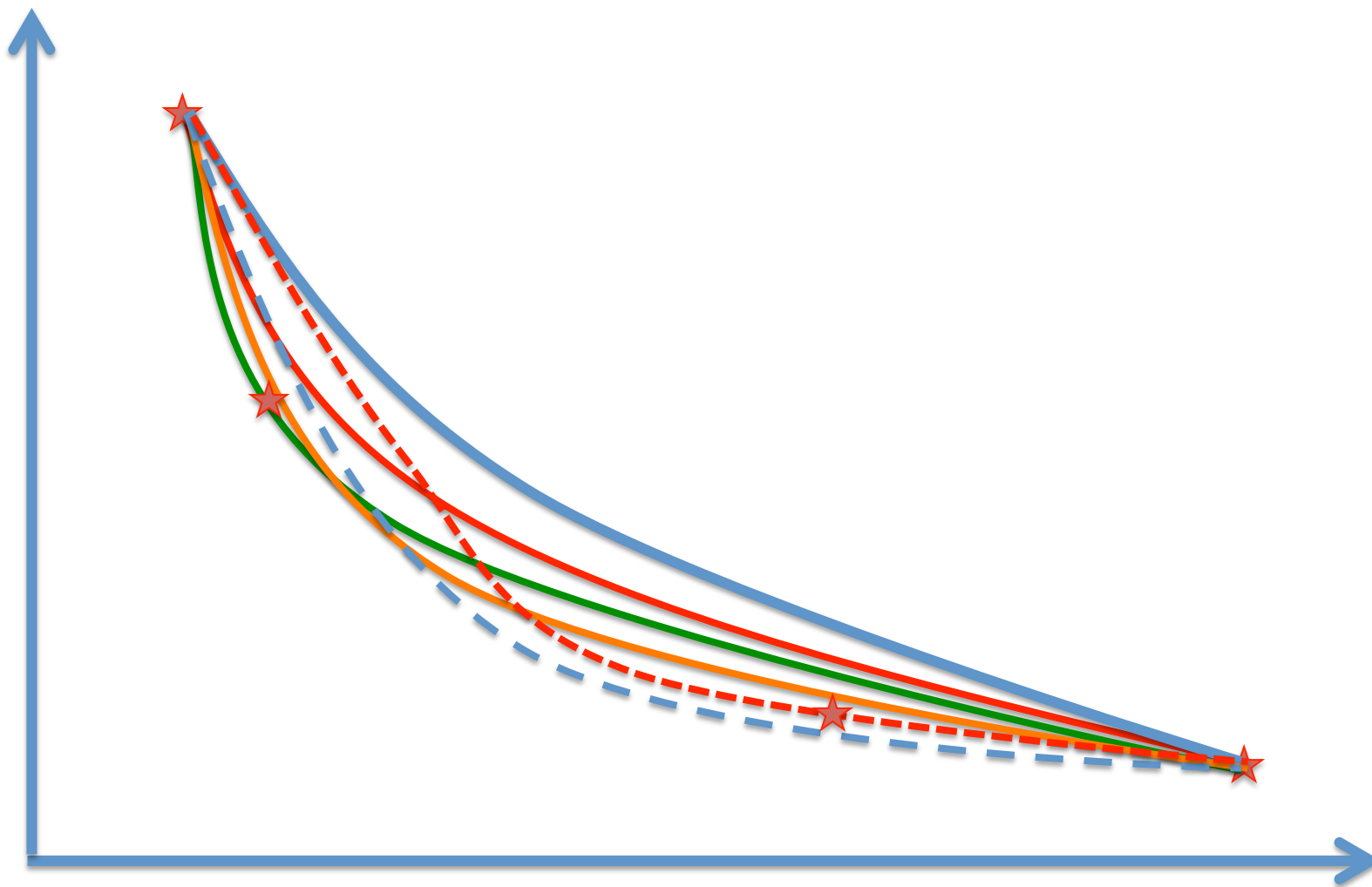
Population pharmacokinetic



Population pharmacokinetic



Population pharmacokinetic



Single
patient
data



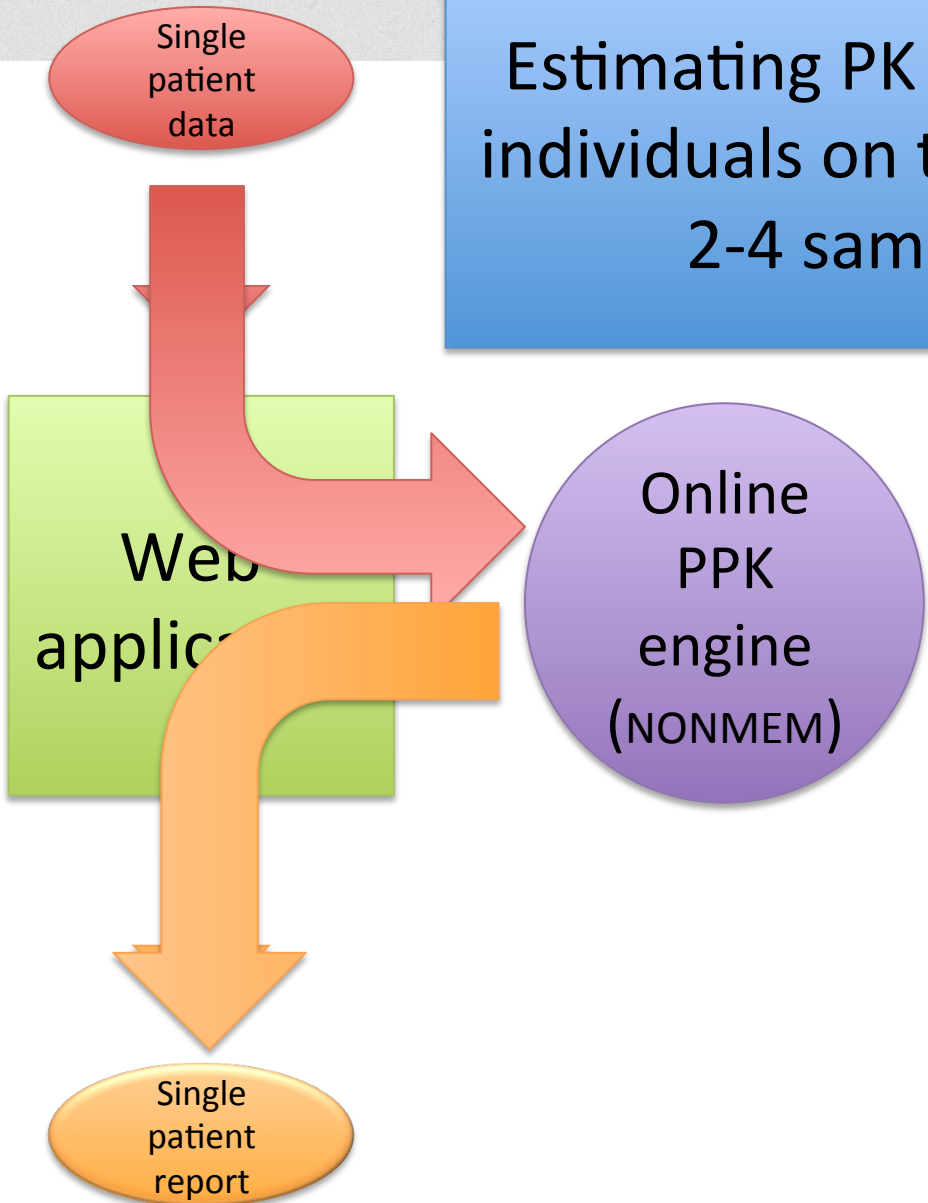
Web-
application

Estimating PK for single
individuals on the base of
2-4 samples

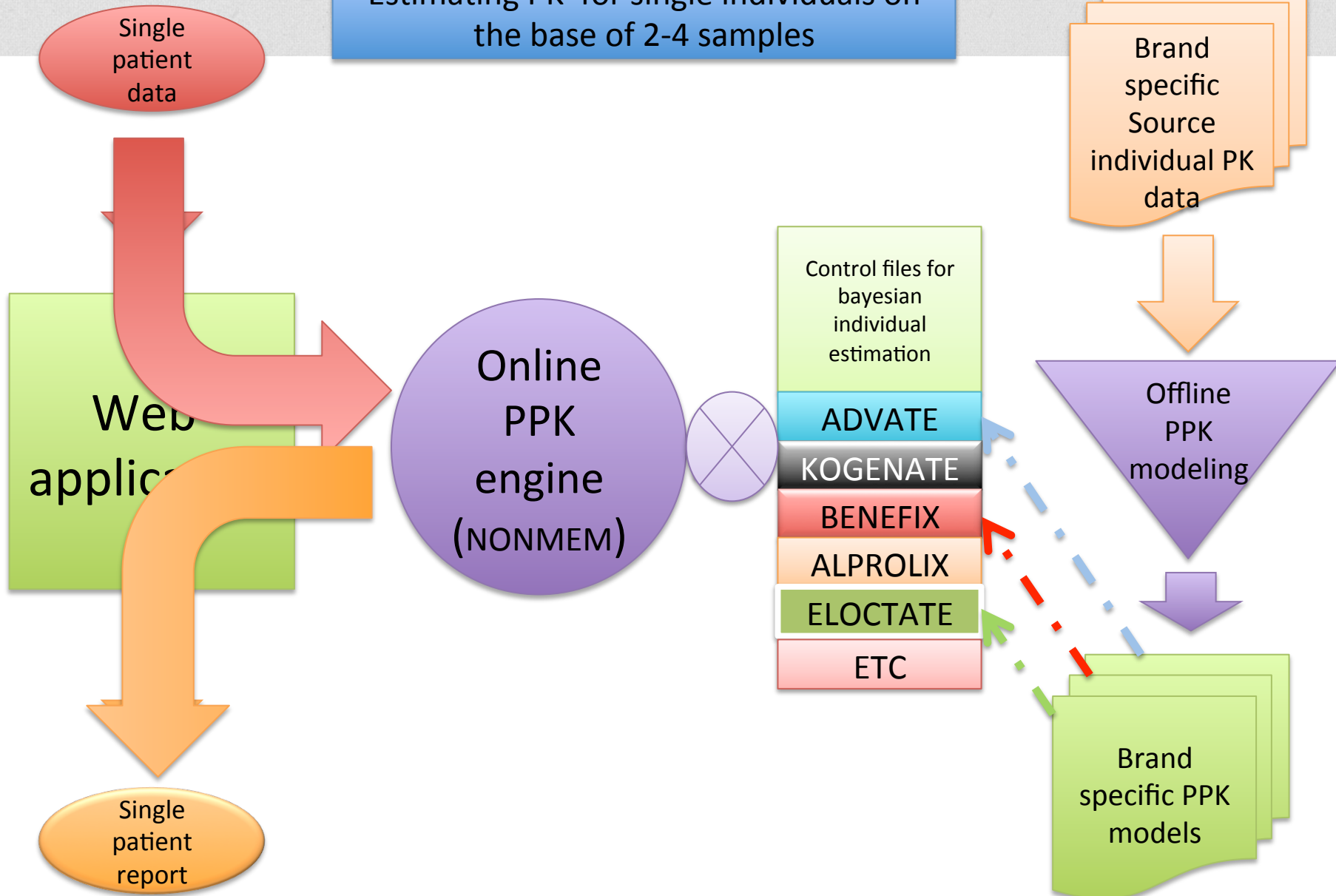


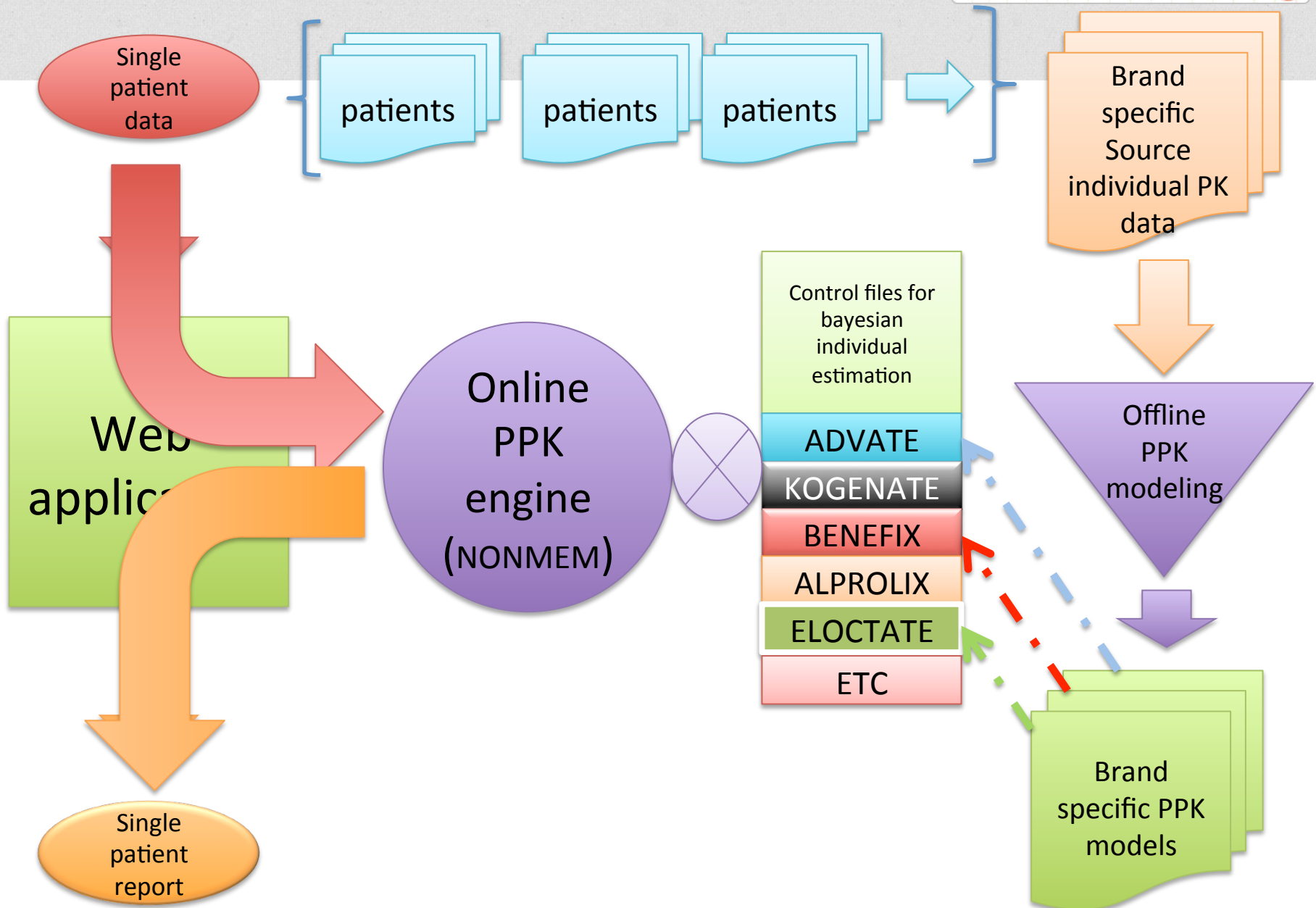
Single
patient
report

Estimating PK for single individuals on the base of 2-4 samples



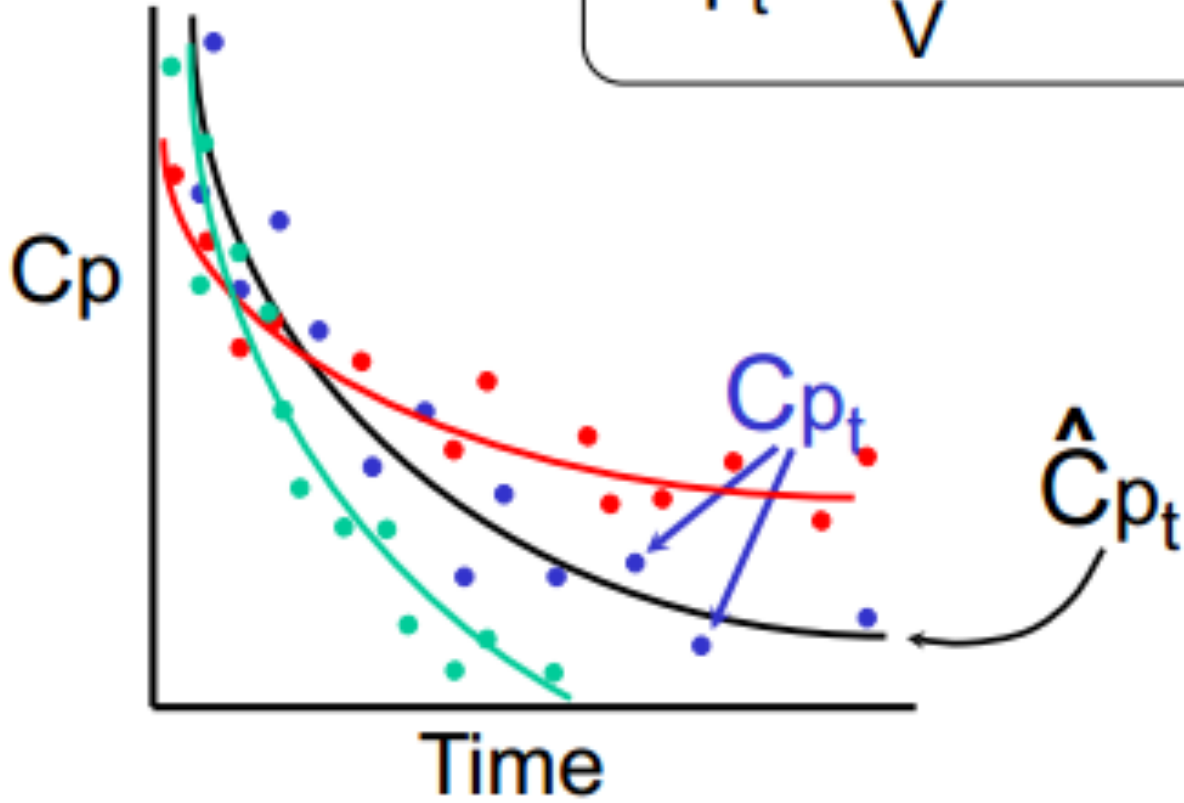
Estimating PK for single individuals on the base of 2-4 samples



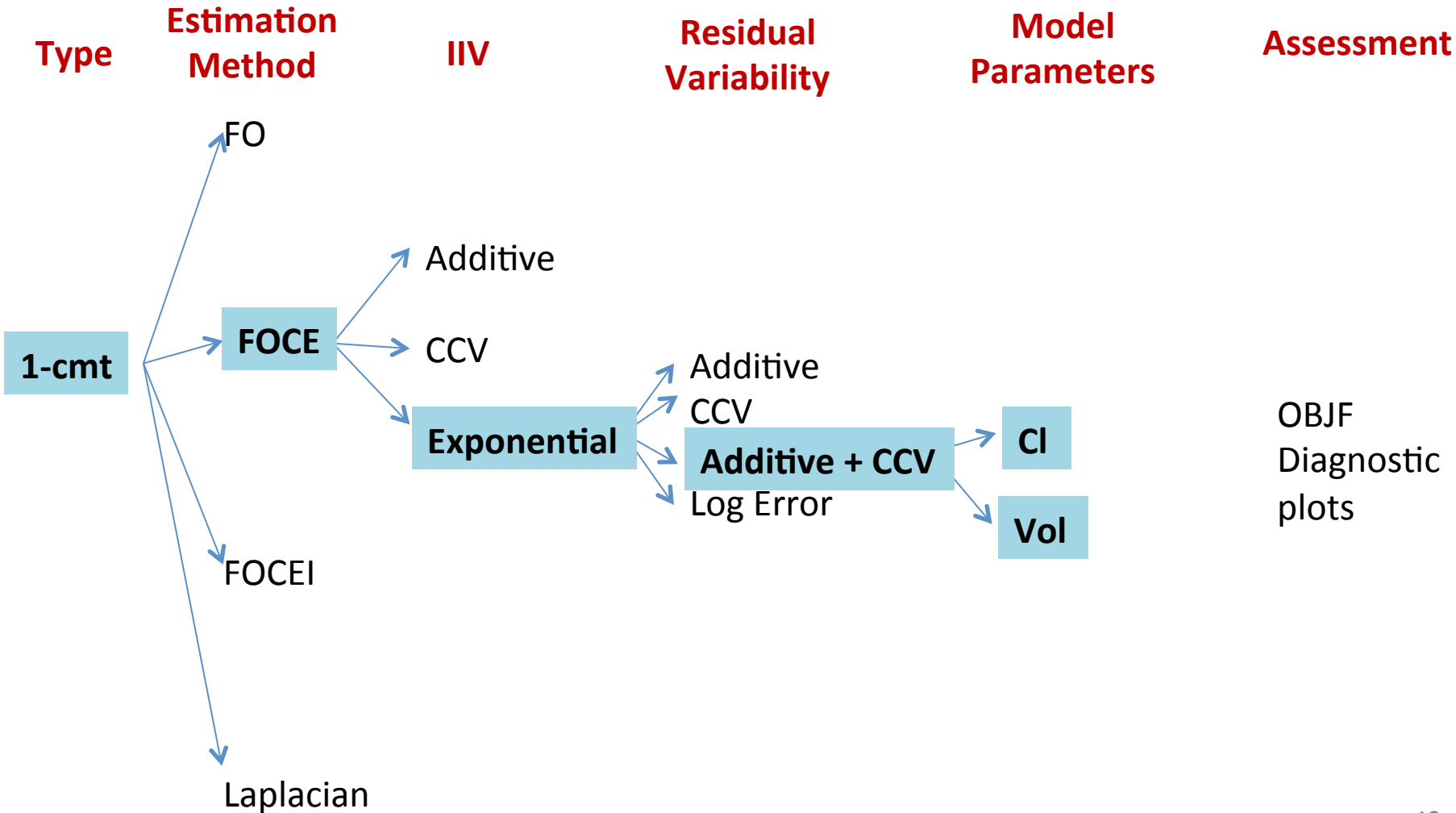


Modeling: Base Structural Model

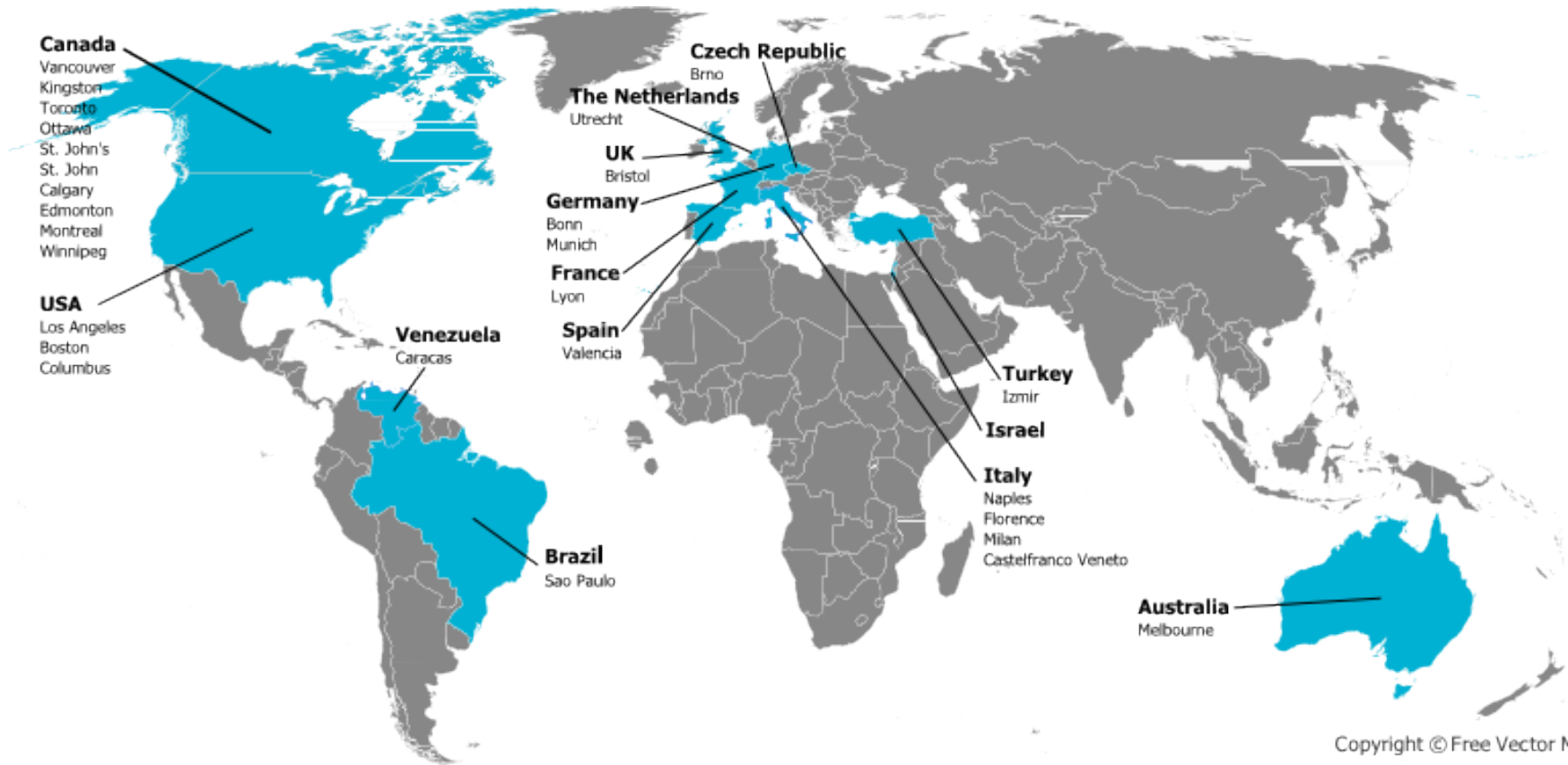
$$\hat{C}_{p_t} = \frac{D}{V} e^{-(CL/V) \cdot t}$$



Modeling: Base Structural Model



The WAPPS network




WAPPS: the website

New Patient Entry

Required Fields

Gender:

Date of Birth :

Local Patient ID :

Consent: Informed consent to enter their data into the system

Optional Fields

Blood Group:

Baseline Factor Level : (U/ml)

Positive History of Inhibitors:

Save

Patient List



[Clear](#)

Patient ID ↕	Age ↕	Gender ↕	Blood Group ↕
ADVATE 2	31	M	N/A
ADVATE 2a	31	M	N/A
ADVATE1	56	M	N/A
ADVATE1a	56	M	N/A
ADVATE1b	58	M	N/A
Advate3	35	M	N/A
Advate4	25	M	N/A
Advate5	53	M	N/A
Alfonso lorio	20	M	N/A
Alprolix 3	57	M	N/A

1 2 3 4 5

WAPPS: the website



▼	Advate	45	2000	44.4	2014-09-16 12:00 PM	5	One Stage Coag. (PTT Based)	Generic	0
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Measurement Date/Time	Time Elapsed (h:m)	Concentration	Note
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2014-09-16 04:00 PM

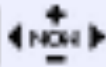
4:0

0.85

2014-09-16

TBD

12:00 PM



Finalize Measurements

▶	Kogenate	65	3900	60.0	2014-10-02 11:00 AM	0	One Stage Coag. (PTT Based)	Drug Specific	0
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Request PK Calculation

Pharmacokinetic Estimates

Half-Life (hr)	10.5 (8 – 13)
Time to 0.05 IU/ml (hr)	39.5 (36 – 42)
Time to 0.02 IU/ml (hr)	53.0 (48 – 58)
Time to 0.01 IU/ml (hr)	63.0 (59 – 67)

Pharmacokinetic Estimates

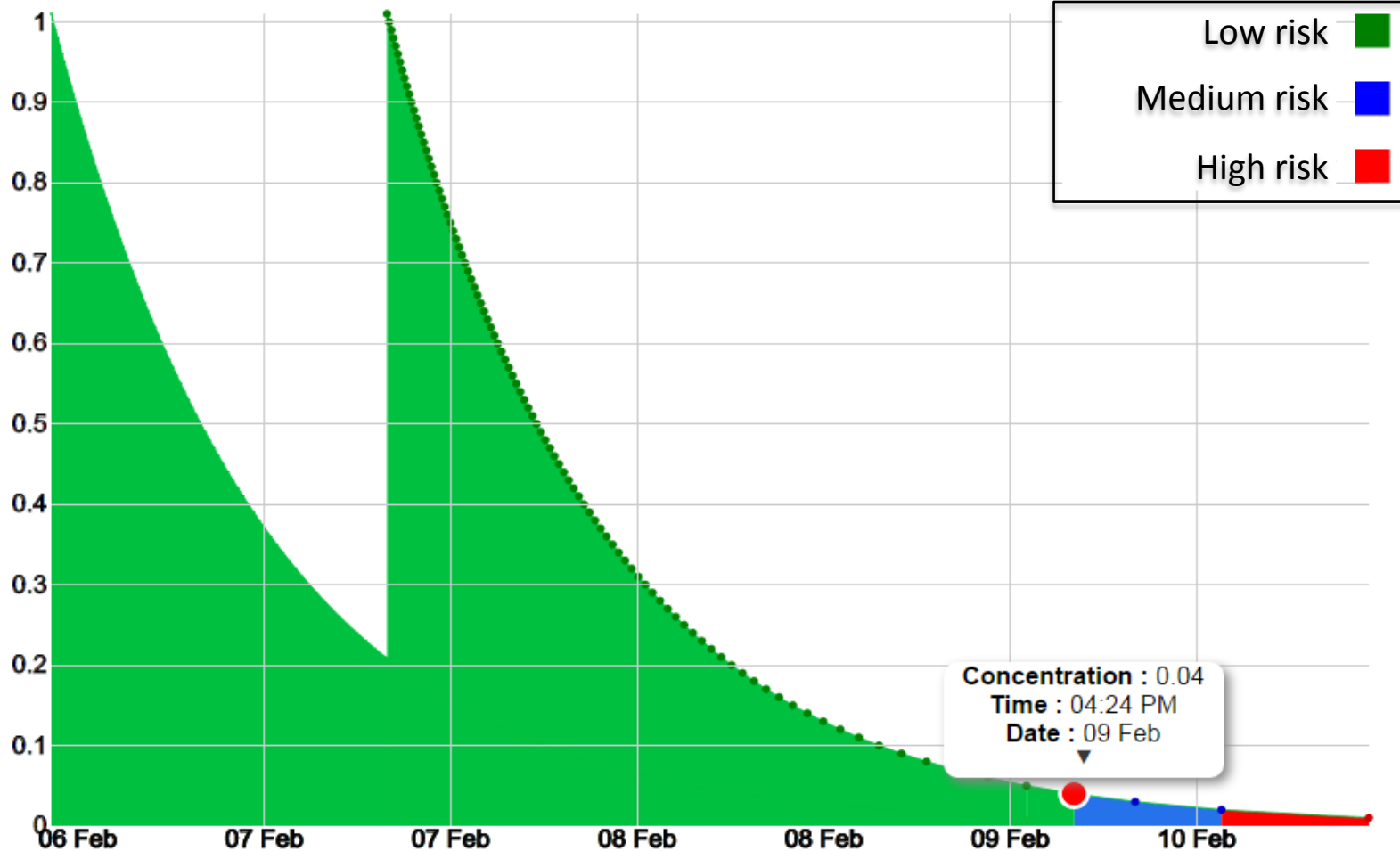
Infusion data used for the assessment:

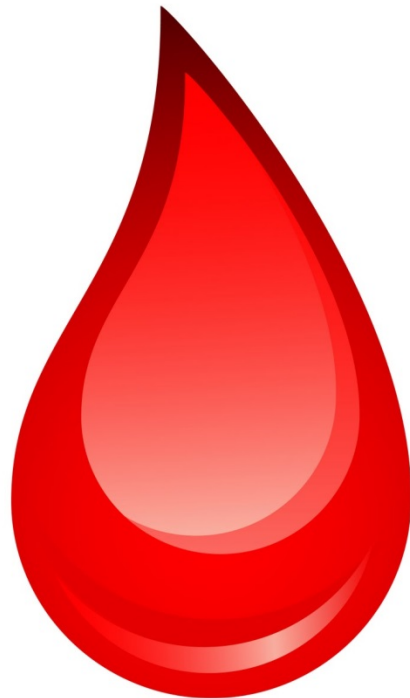
Drug	BW (kg)	Total U	U/kg	Infusion end time	Duration (mins)	Test	Standard	
▶ Advate	60	2990	49.8	2015-01-23 09:00 AM	0	One Stage Coag. (PTT Based)	Drug Specific	
Measurement Date/Time				Time Elapsed (h:m)		Concentration		N
2015-01-23 09:11 AM				0:11		0.86		
2015-01-23 02:10 PM				5:10		0.51		
2015-01-25 07:34 AM				46:34		0.03		

Disclaimer: This is a research service under development, not yet validated for clinical practice use. Any use of the results of the population pharmacokinetic estimation in the care of individual patients is not recommended and cannot be considered part of the service in this phase. The local investigator is solely responsible for any such use.

Produced by: WAPPS-Hemo Project (<http://www.wapps-hemo.org/>)

Approved by: Doctor Alfonso Iorio





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Download these slides at:
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Thank you !!!