Children's Hospital of Philadelphia®

ECMO Center

How POCT is Used with Our Population

Jim Connelly, RRT-NPS, FELSO
Manager, ECMO Center

Children's Hospital of Philadelphia®

What is ECMO?

- Extracorporeal Membrane Oxygenation (ECMO)
- A temporary modified heart-lung bypass technique used to treat reversible cardiopulmonary failure that is no longer responsive to maximal conventional therapy.
- Life Support technology

What Happens Prior to ECMO Initiation?

- Patient Arrives: ED, Transport, Operating Room
- Admitted to an Intensive Care Unit
  - Admission Labs (all STAT, of course)
    - Type and Screen
    - Coagulation Panel
    - Chemistry Panel
    - Hematology Panel
    - Blood Cultures
    - Blood Gases w/ lactate, iCA++
    - Radiology Imaging- CXR

    - **ECMO Candidacy Determined**

Who Needs ECMO?

Respiratory failure

- Failure to respond to maximal therapy
- Failure to improve despite prolonged maximal therapy (> 7 days)
- Acute deterioration

Cardiac disease

- Failure to wean from Cardiac Pulmonary Bypass
- Low output syndrome
- Cardiac arrest

ECMO Activation, Big Deal or Not?

- Attending Physician, Surgical Attending agree and activate
- Fellows, Residents, FLOCs
- Nursing teams
- Respiratory Care
- Pharmacy
- Security
- Previously mentioned Clinical Labs
- And the ECMO team and/or Perfusion Team

ECMO Activation, Big Deal or Not?

- Attending Physician, Surgical Attending agree and activate
- Fellows, Residents, FLOCs
- Nursing teams

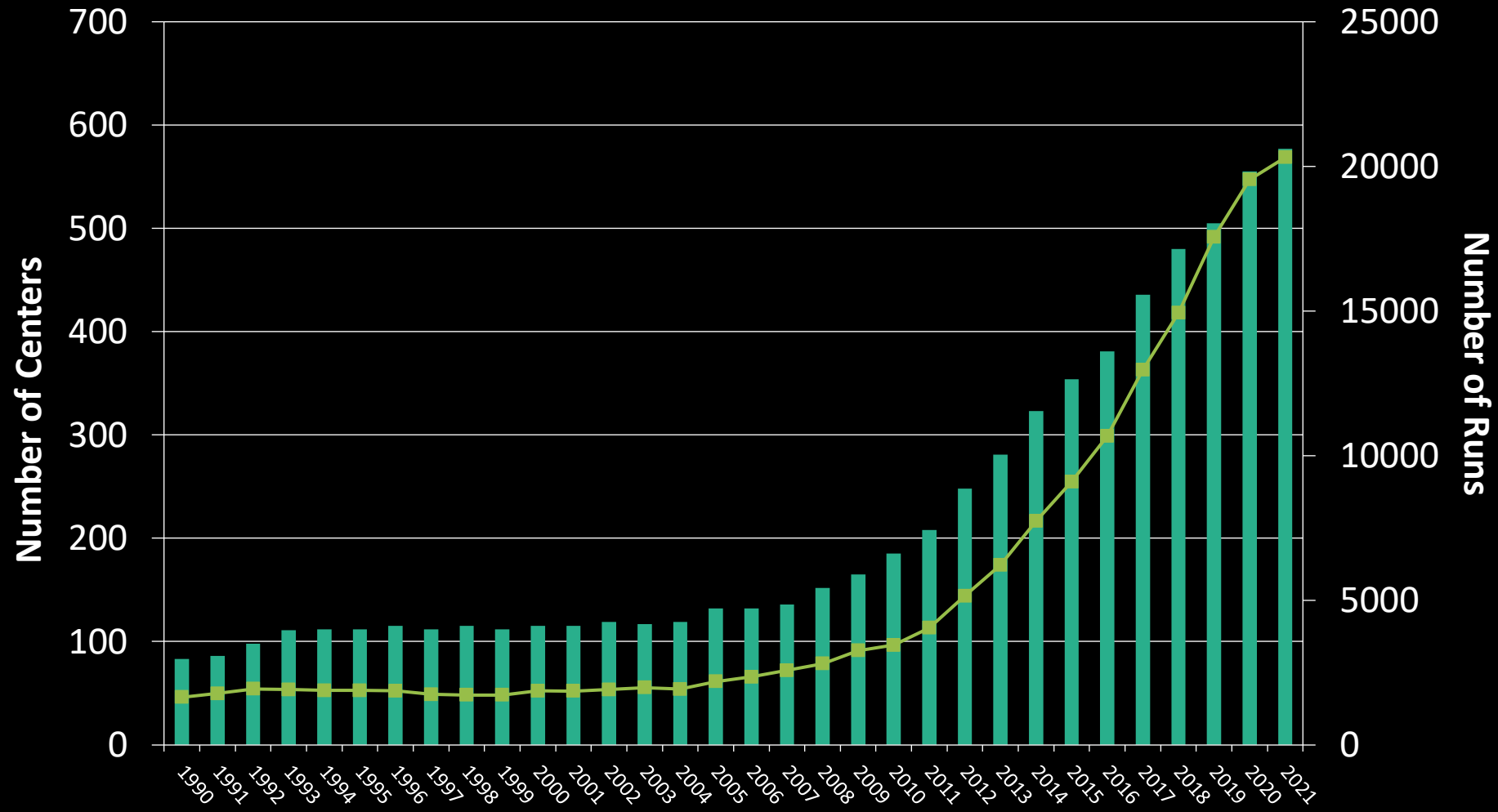
UNPUBLISHED TIME/MOTION STUDY FOUND APPROX. 77 PEOPLE ARE IN MOTION WHEN ECMO IS ACTIVATED

- Respiratory Care
- Pharmacy
- Security
- Previously mentioned Clinical Labs
- And the ECMO team and/or Perfusion Team

ECMO patient population

- **NICU-**
  - Meconium Aspiration Syndrome (MAS)/Cooling
  - Persistent Pulmonary Hypertension Newborn (PPHN)
  - Sepsis/Pertussis
  - Congenital Diaphragmatic Hernia (CDH)/Lung lesions
  - Special Delivery Unit (SDU) standby
- **CICU-**
  - Every postop Cardiac OR
  - Cardiomyopathy
  - Heart transplant
  - ECMO CPR (ECPR)
- **PICU-**
  - Respiratory failure/Adult Respiratory Distress Syndrome (ARDS)
  - Asthma
  - Lung transplant
  - Battery ingestion
  - Unknown witnessed arrest

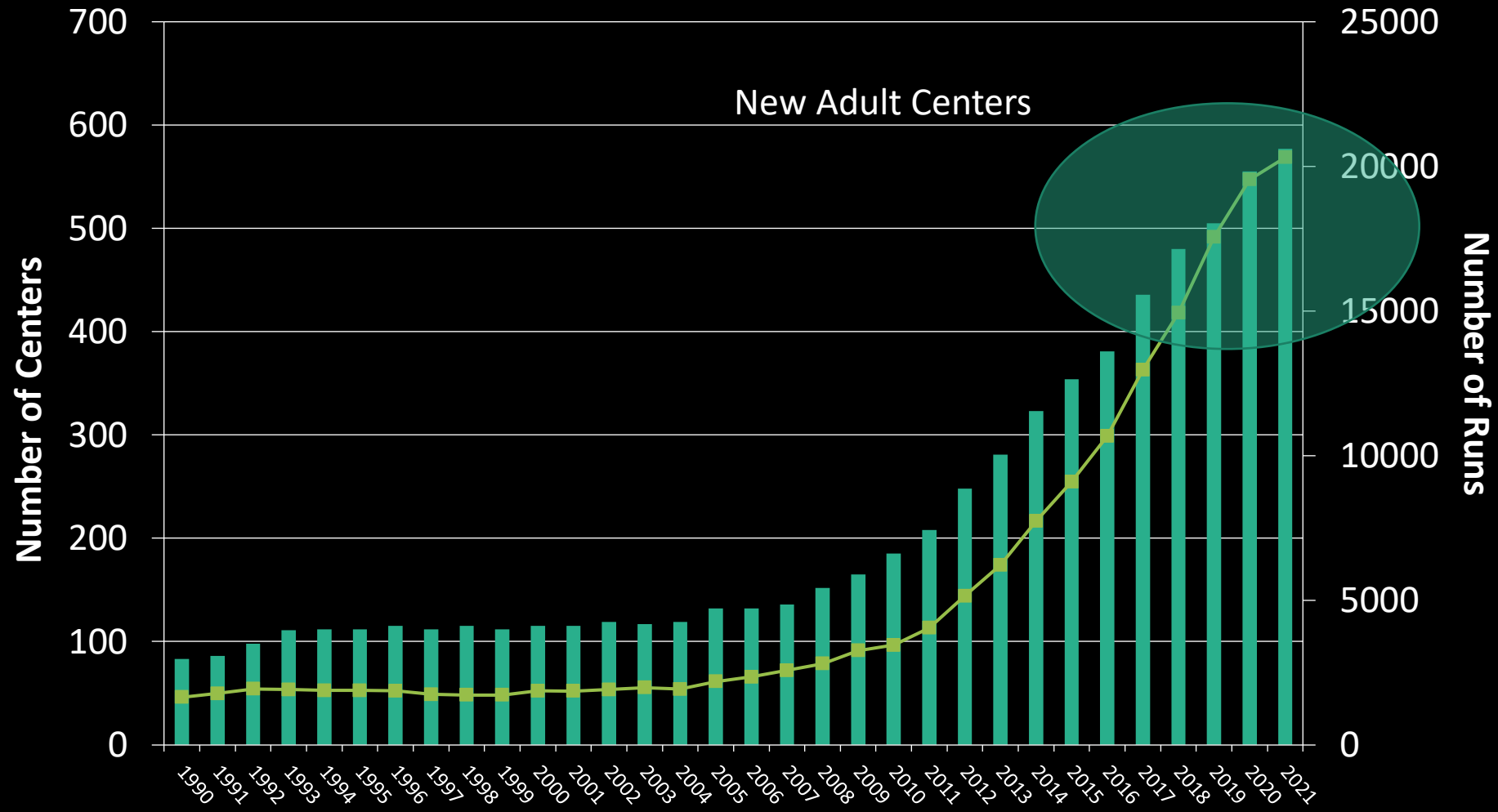
Active ECLS Centers



Data Through December 31, 2021

ELSO Registry

Active ECLS Centers



Data Through December 31, 2021

ELSO Registry

Overall Patient Outcomes

	Total Runs	Survived ECLS		Survived to DC		
Adult						
Pulmonary	44,454	29,504	66%	26,019	58%	
Cardiac	39,659	23,763	59%	18,027	45%	
ECPR	12,125	5,102	42%	3684	30%	
Pediatric						
Pulmonary	11,935	8,685	72%	7,295	61%	
Cardiac	15,230	11,074	72%	8,293	54%	
ECPR	6,182	3,647	58%	2,619	42%	
Neonatal						
Pulmonary	34,239	29,972	87%	25,005	73%	
Cardiac	10,233	7,085	69%	4,546	44%	
ECPR	2,439	17,700	69%	1,042	42%	
Total	**176,496**	**120,532**	**68%**	**96,530**	**54%**	

Data Through December 31, 2021

ELSO Registry

Center Bed Map

Room Team

36.6 C

When is POCT Most Useful?

- Pre-ECMO Use: General Medical Management
- During Priming: Circuit Blood Gases and Clotting Time
- During ECMO:
- ACT Q2
  Routine and STAT labs: Q 2 to Q 12
- During ECMO Run, Preparing for Decannulation:
- Trial Off (POCT is most valuable)
- Pre-clamping assessment
- During clamping: assessment of blood gases Q10”
- Duration of trial less than 30 minutes
- Decision to decannulate

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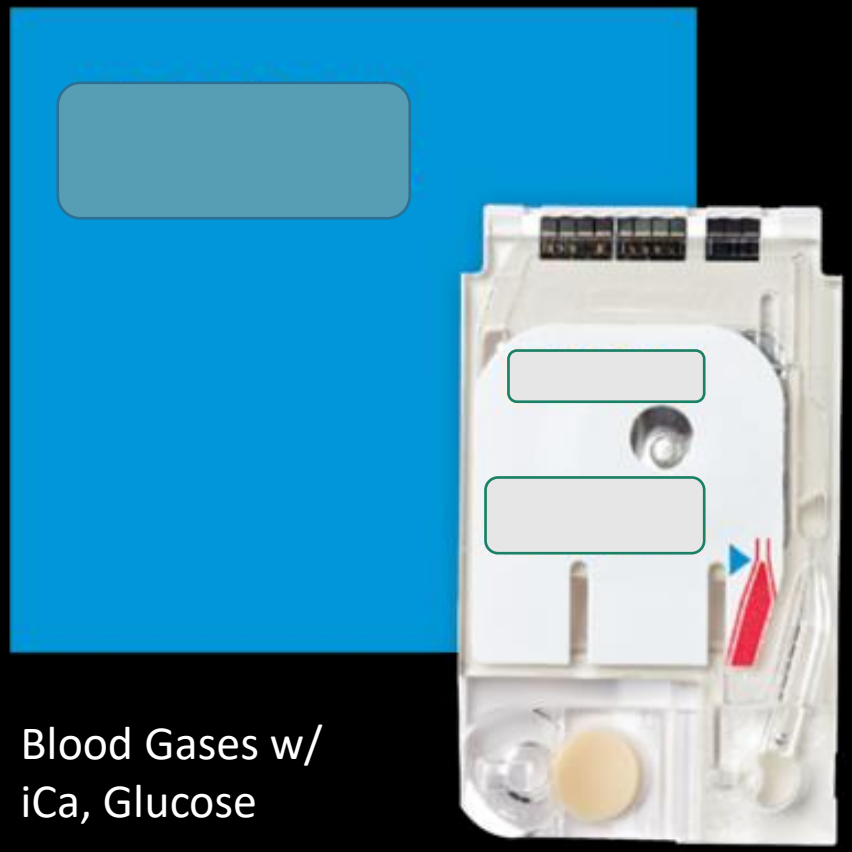
Bedside Blood Gases

Quick Decision-Making

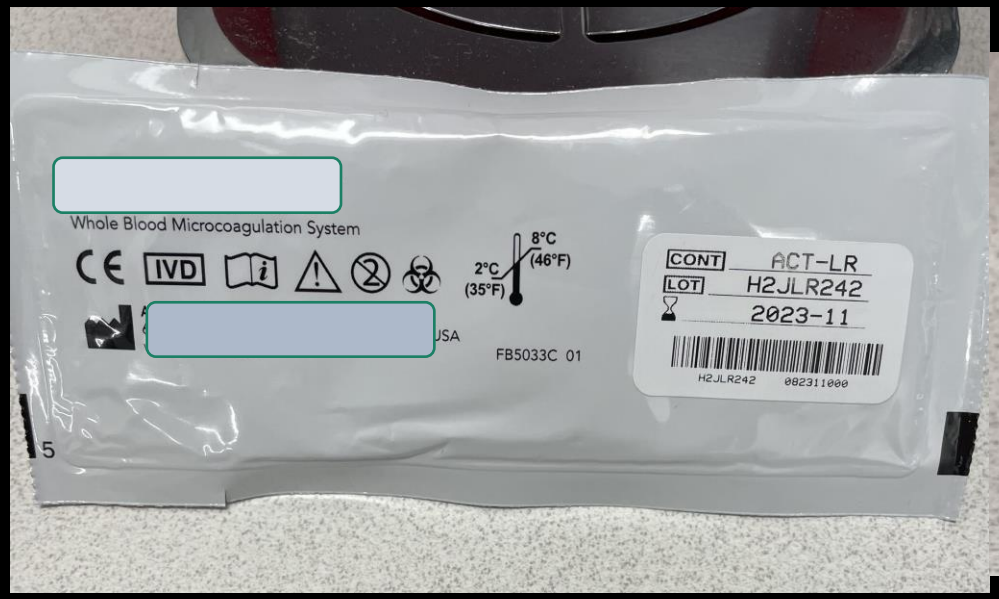
Bedside Blood Gas Analysis for Quicker Decision-Making

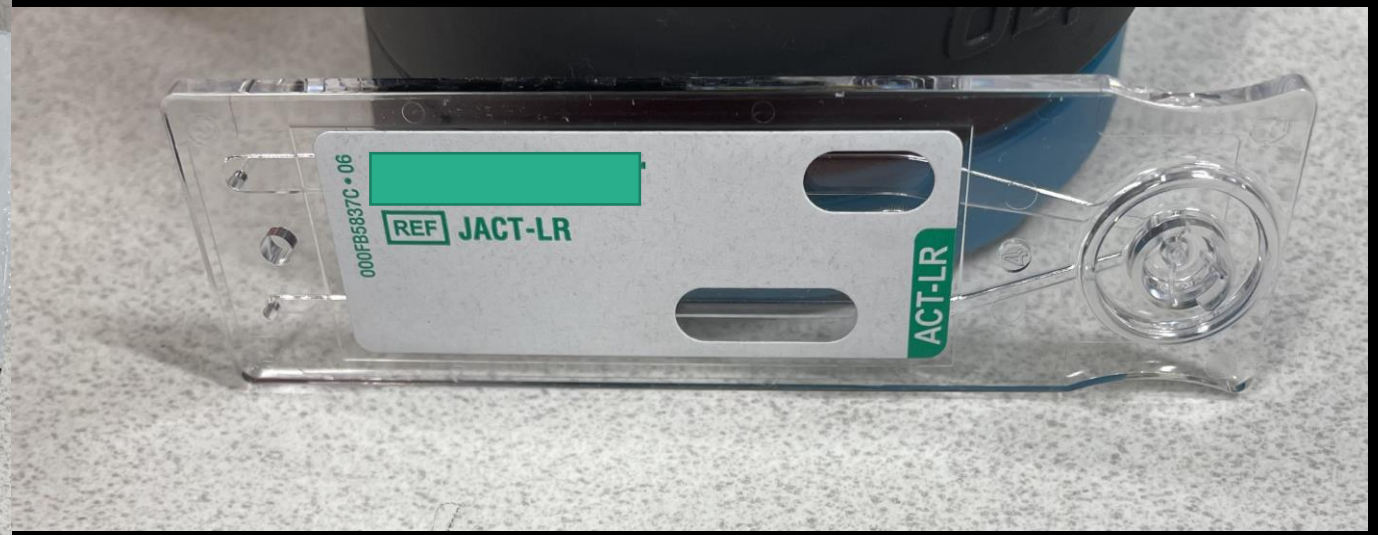


Blood Gases w/
iCa, Glucose

Blood Gases
w/ lactate

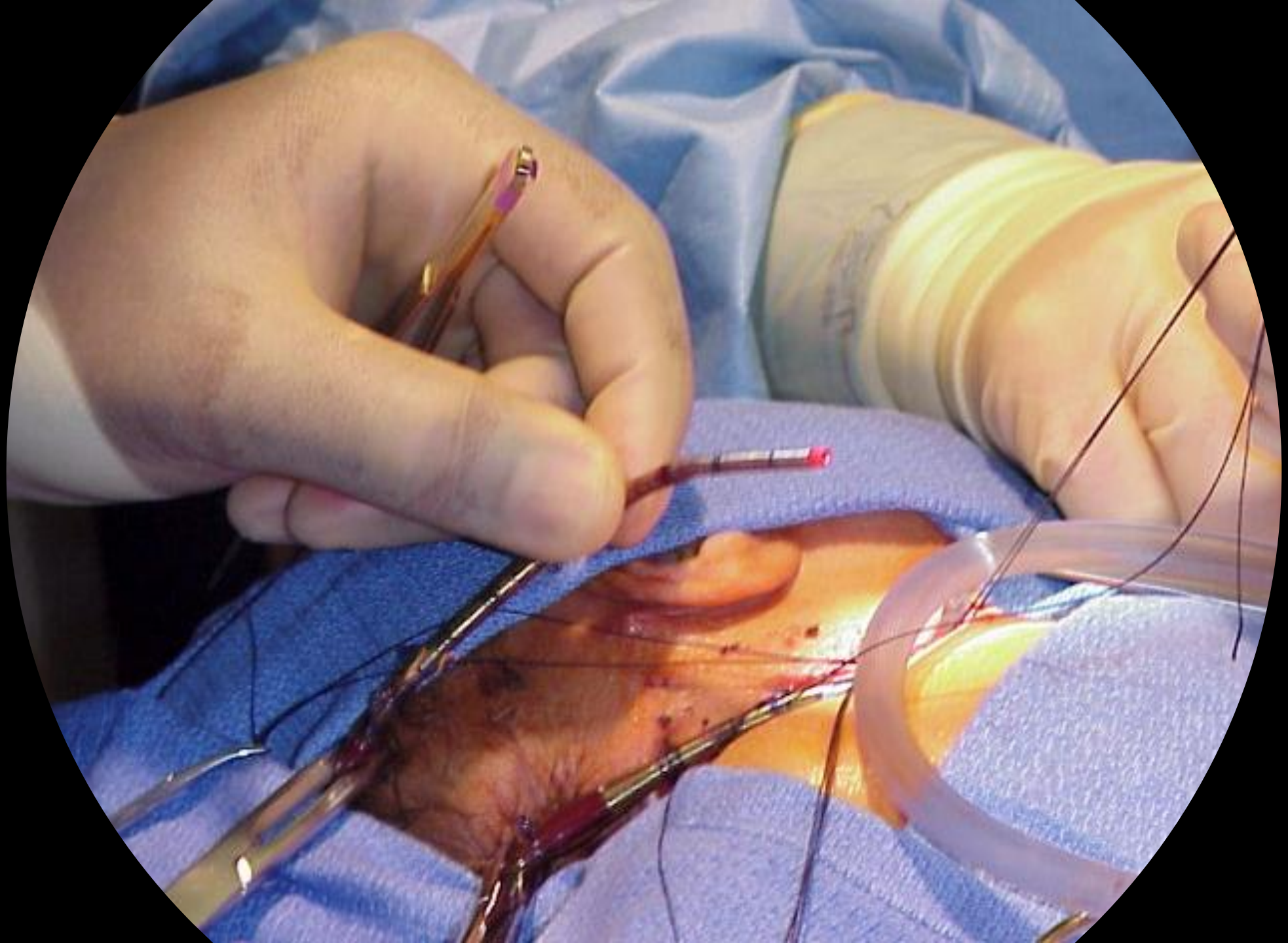
Activated Clotting Time (ACT) LR

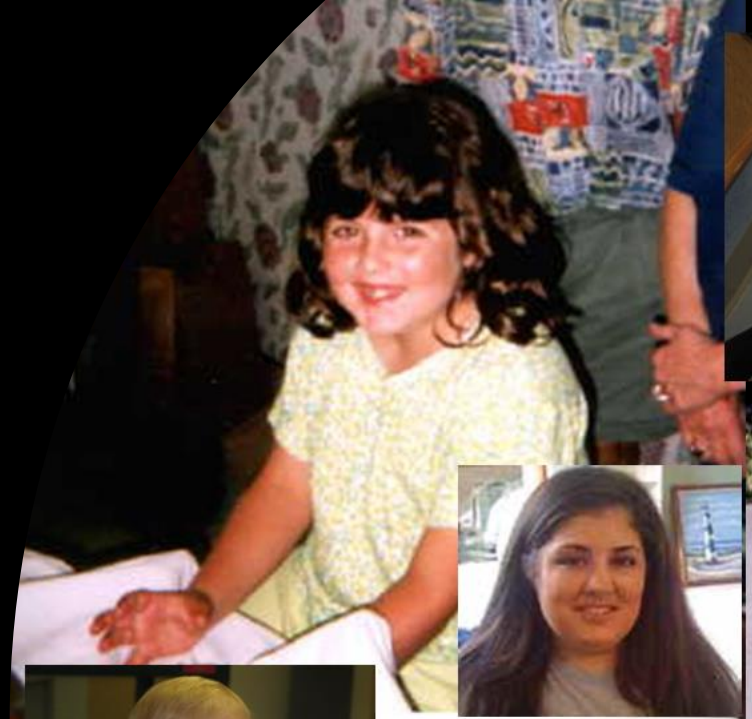




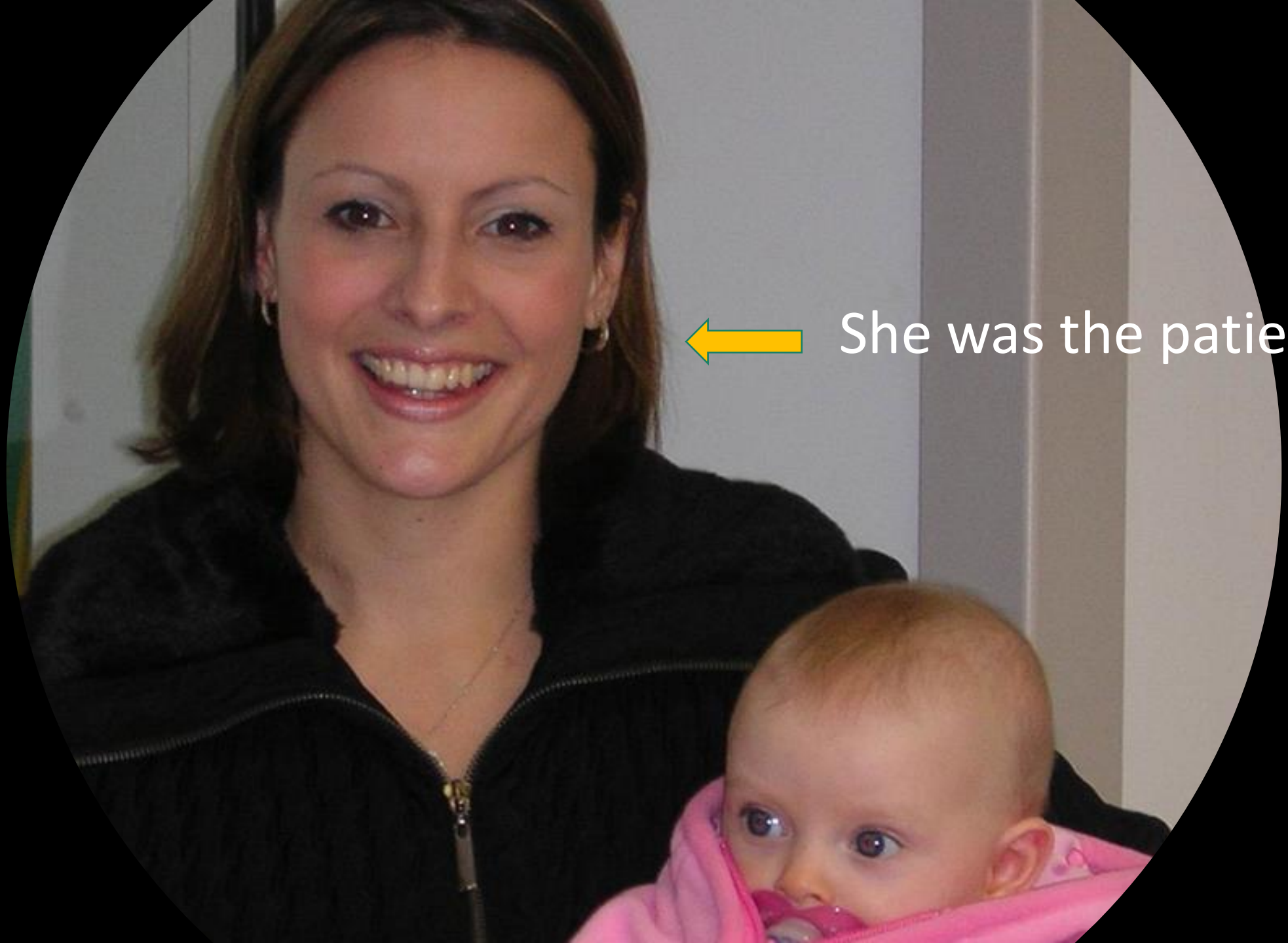
Clinical range in our institution is
160-260 seconds

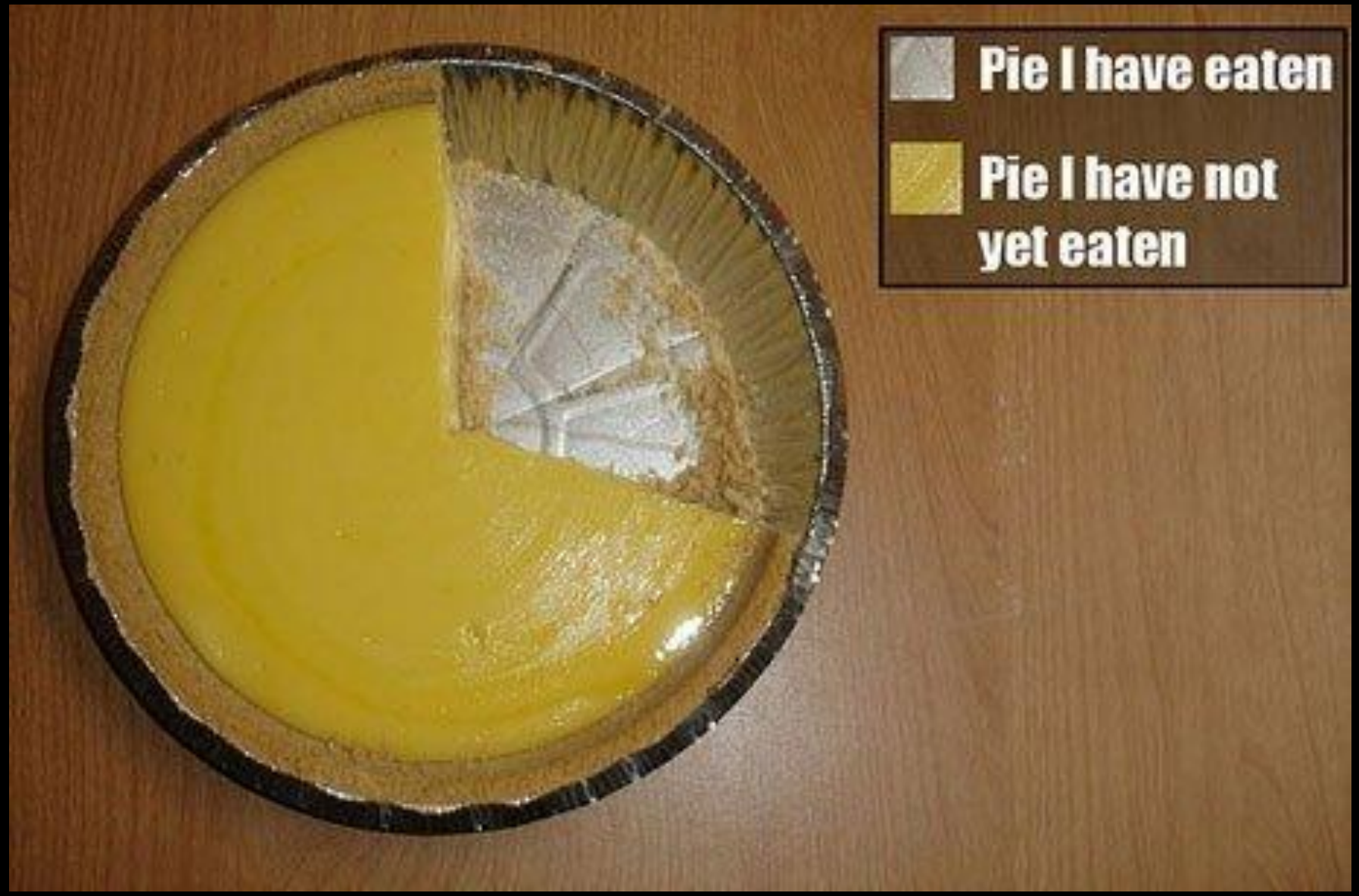
Used in Conjunction with
Coagulation Labs, especially
AntiXa (0.3-0.7)





i'm the
man
of your
dreams


She was the patient!


Pie I have eaten
Pie I have not yet eaten

Summary

We find POCT invaluable as a tool to be able to provide as close to in-the-moment clinical decisions related to management of our patients in the most crucial and time-sensitive moments.

Thromboelastography in Pediatric Cardiac Surgery

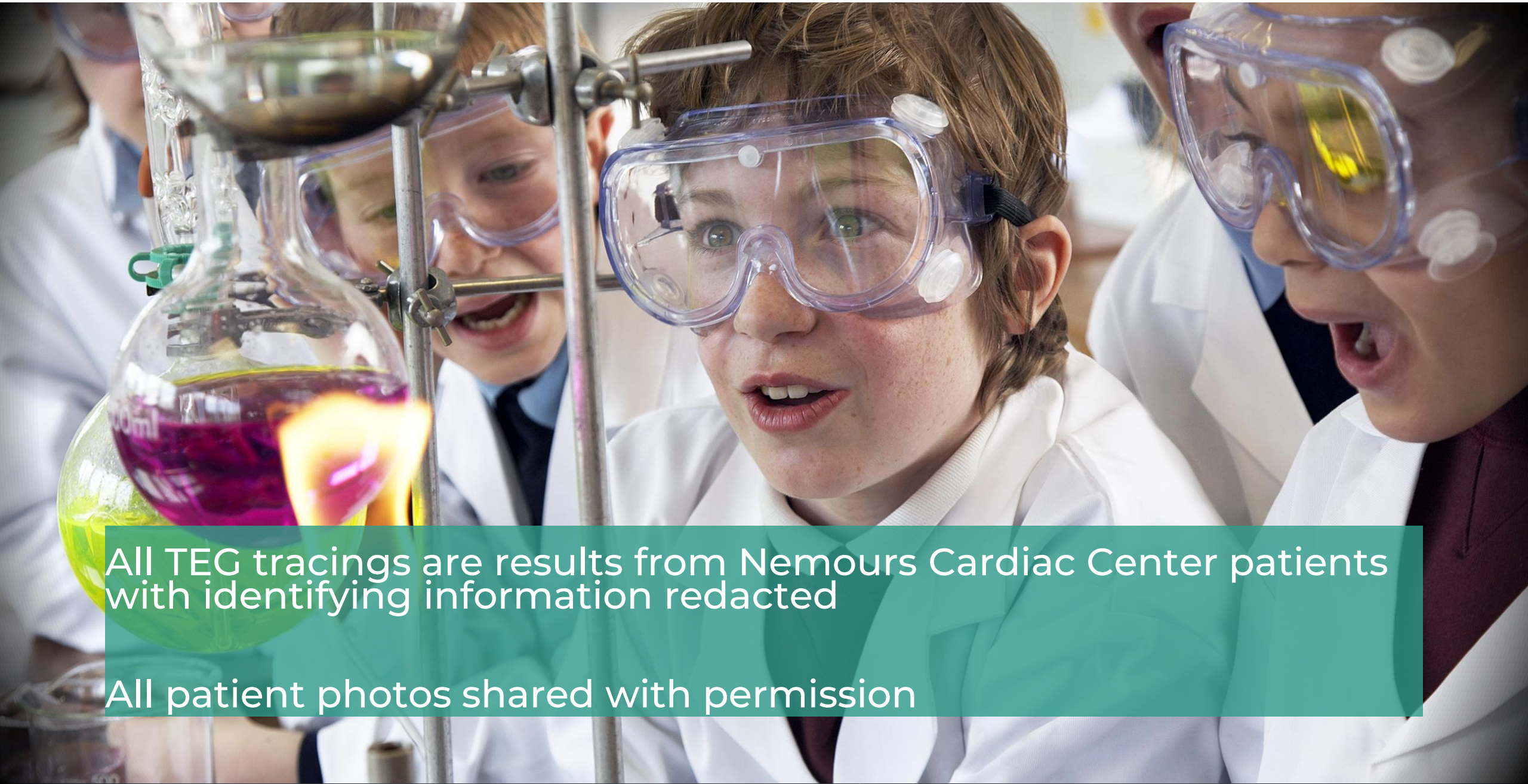
Treating Big Bleeding in Tiny Patients

Daniel Duncan, CCP FPP
Chief of Perfusion

Nemours Children's Hospital, Delaware

No financial disclosures

All surgical photos are property of Nemours Children’s Health



All TEG tracings are results from Nemours Cardiac Center patients with identifying information redacted

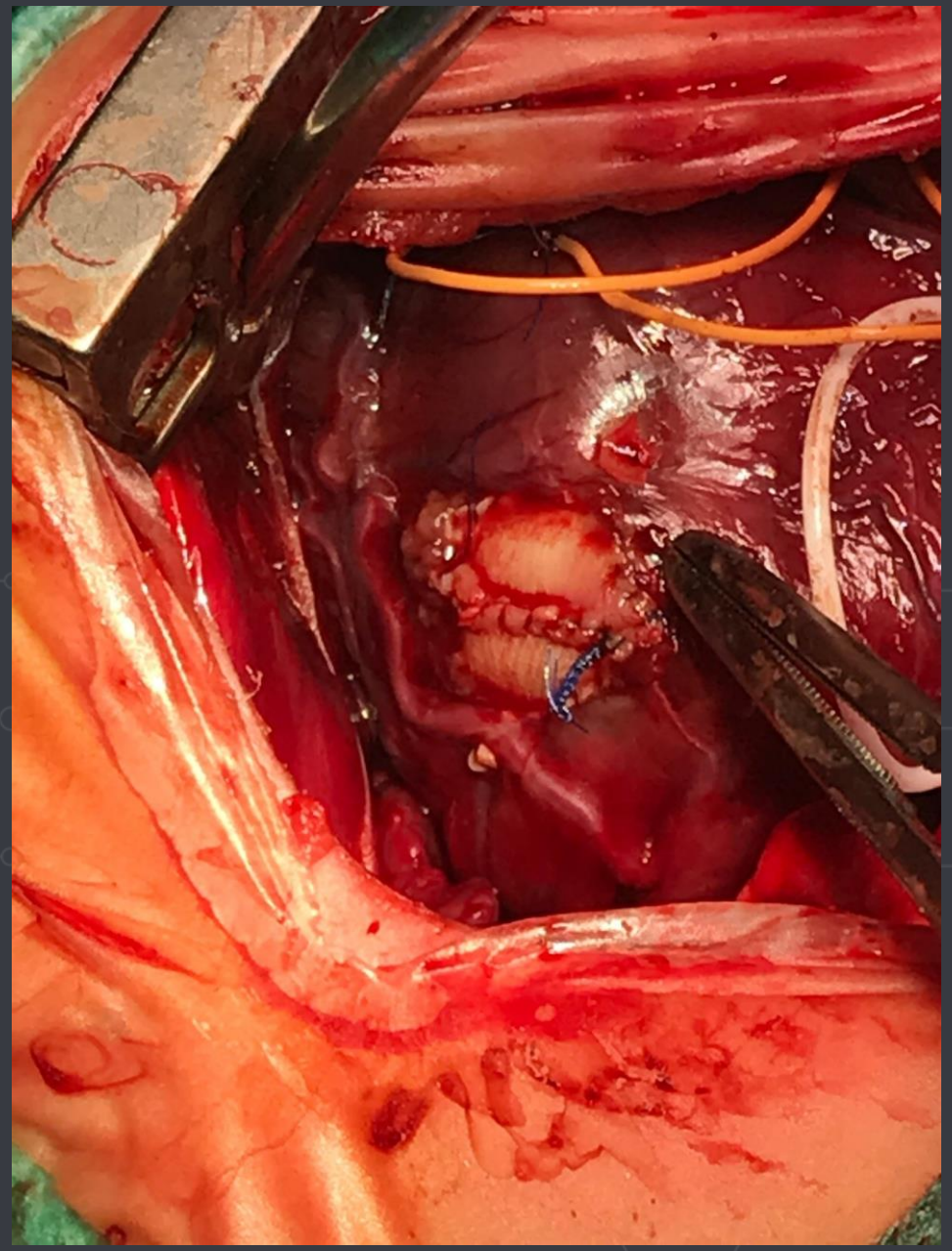
All patient photos shared with permission

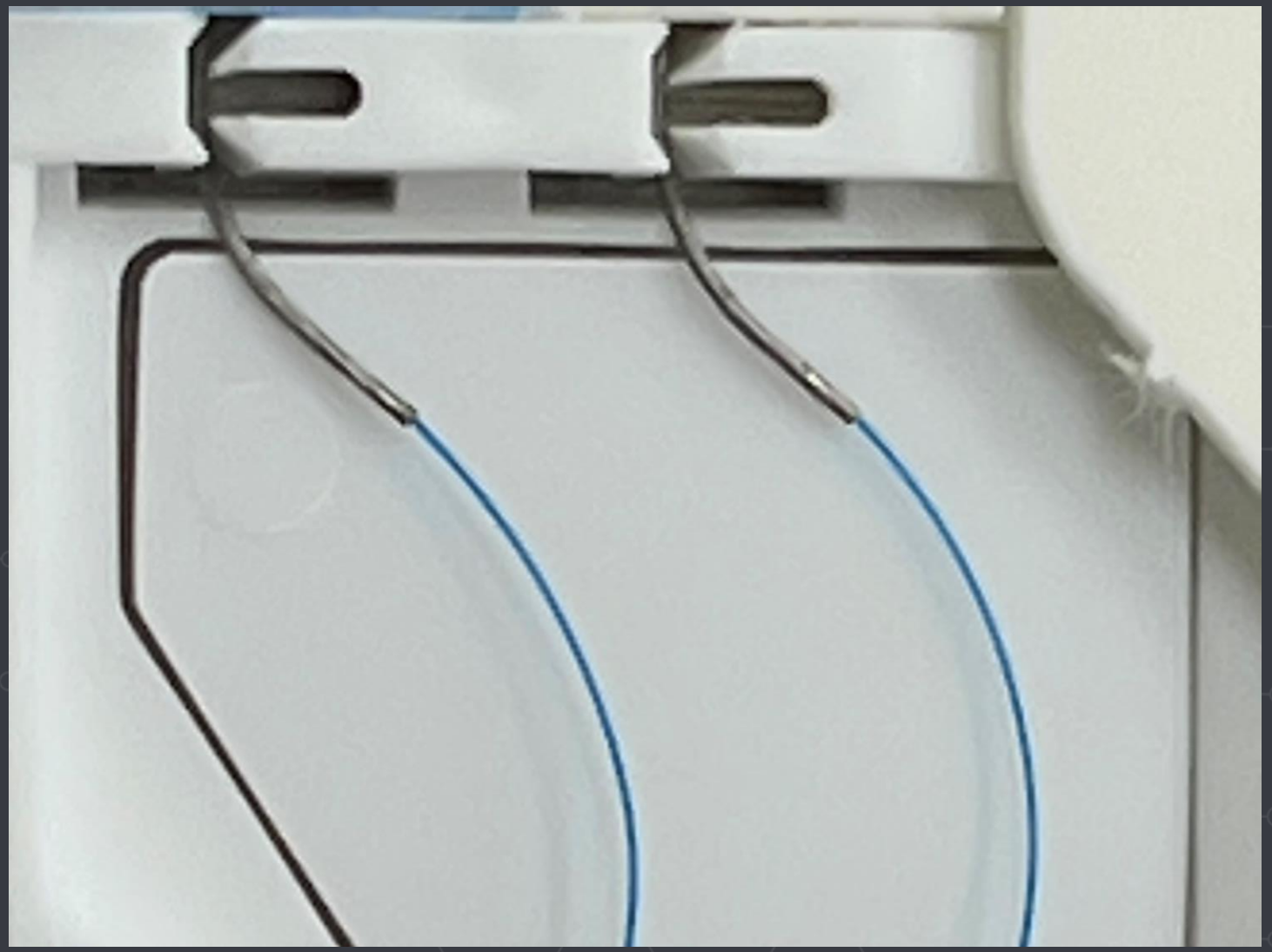
Objectives

- Understand the causes of intraoperative cardiac surgical bleeding, especially in the pediatric population.
- Learn how TEG allows our surgical team to rapidly target bleeding etiology and plan effective blood component therapy.
- Explore how TEG platelet mapping and heparin effect analysis help guide long term anticoagulation for pediatric patients on ventricular assist devices.
- Discuss tips for creating a successful satellite TEG laboratory in the OR, and learn to avoid the pitfalls which could hinder implementation.

Why do Patients Bleed?

- Mechanical: Tissue trauma, suture lines





Why do Patients Bleed?

- Mechanical: Tissue trauma, suture lines
- Anticoagulation required for CPB

VENOUS DRAINAGE
Calibrate CDI
Cooling
Hemoconcentrate
Reperfusion
Rewarm
STOCKERT S5
0.46
0.33
0.33
0.06

Why do Patients Bleed?

- Mechanical: Tissue trauma, suture lines
- Anticoagulation required for CPB
- Blood-foreign surface contact activation and consumptive coagulopathy

Objectives

- Understand the causes of intraoperative cardiac surgical bleeding, especially in the pediatric population.
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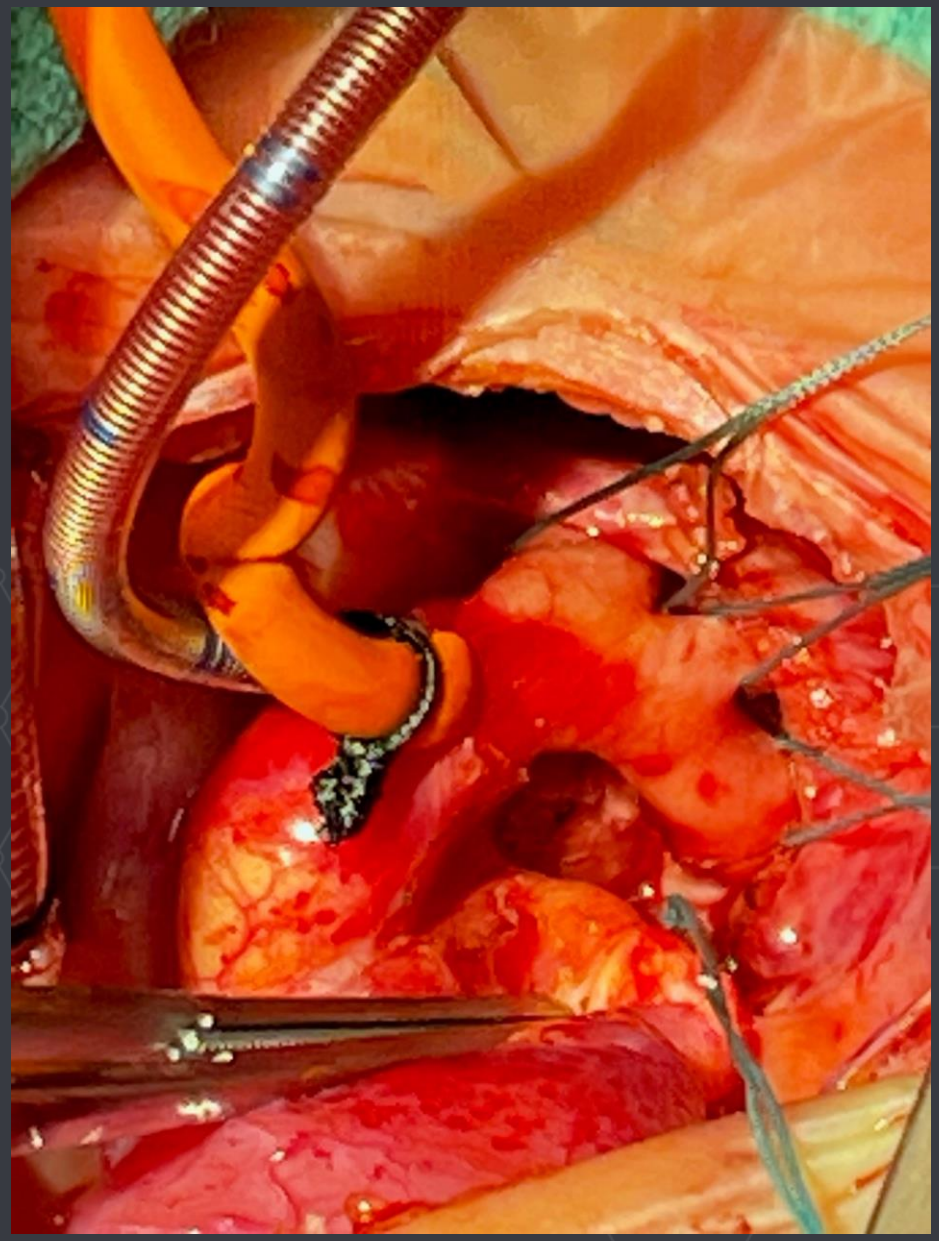
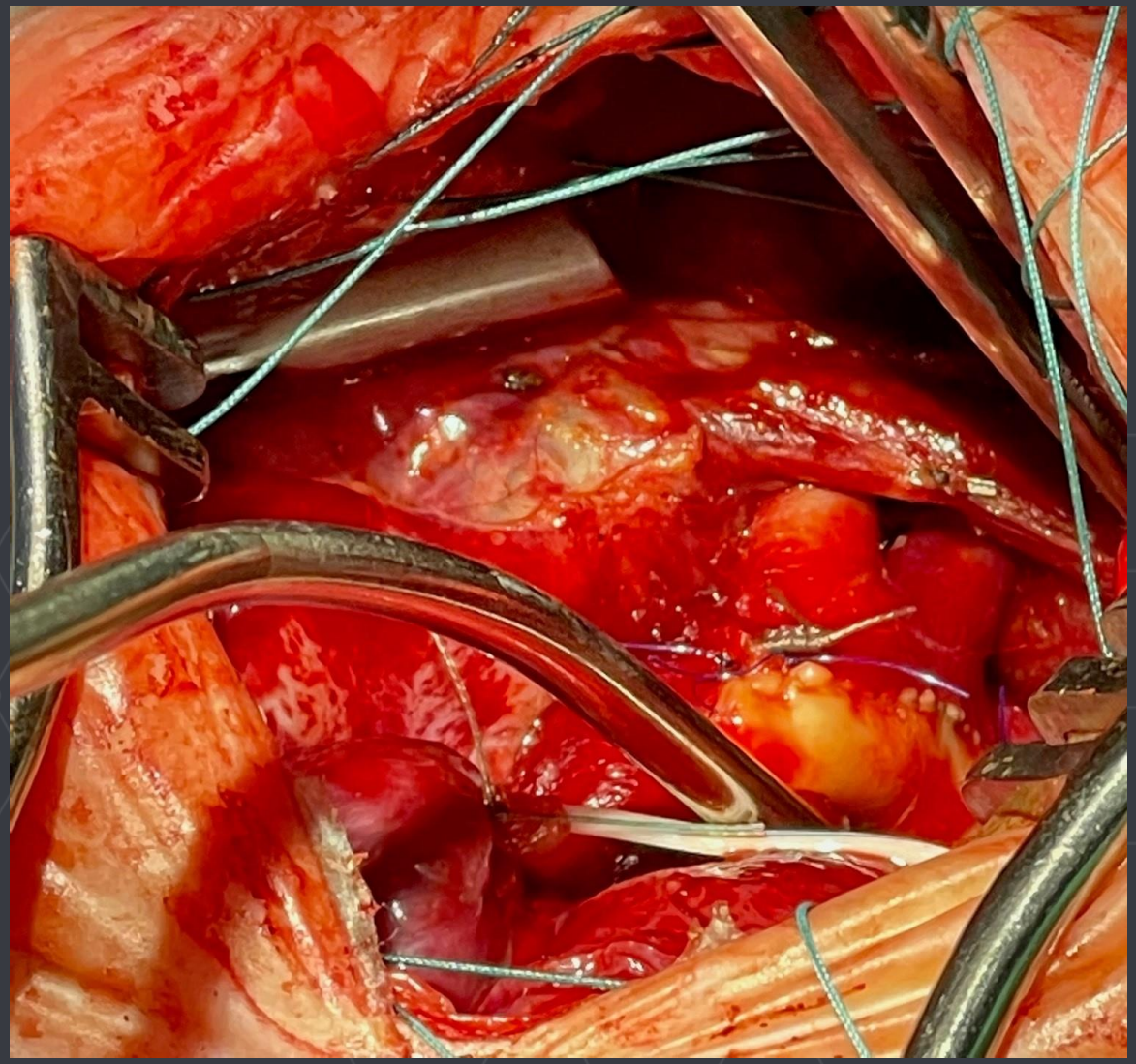
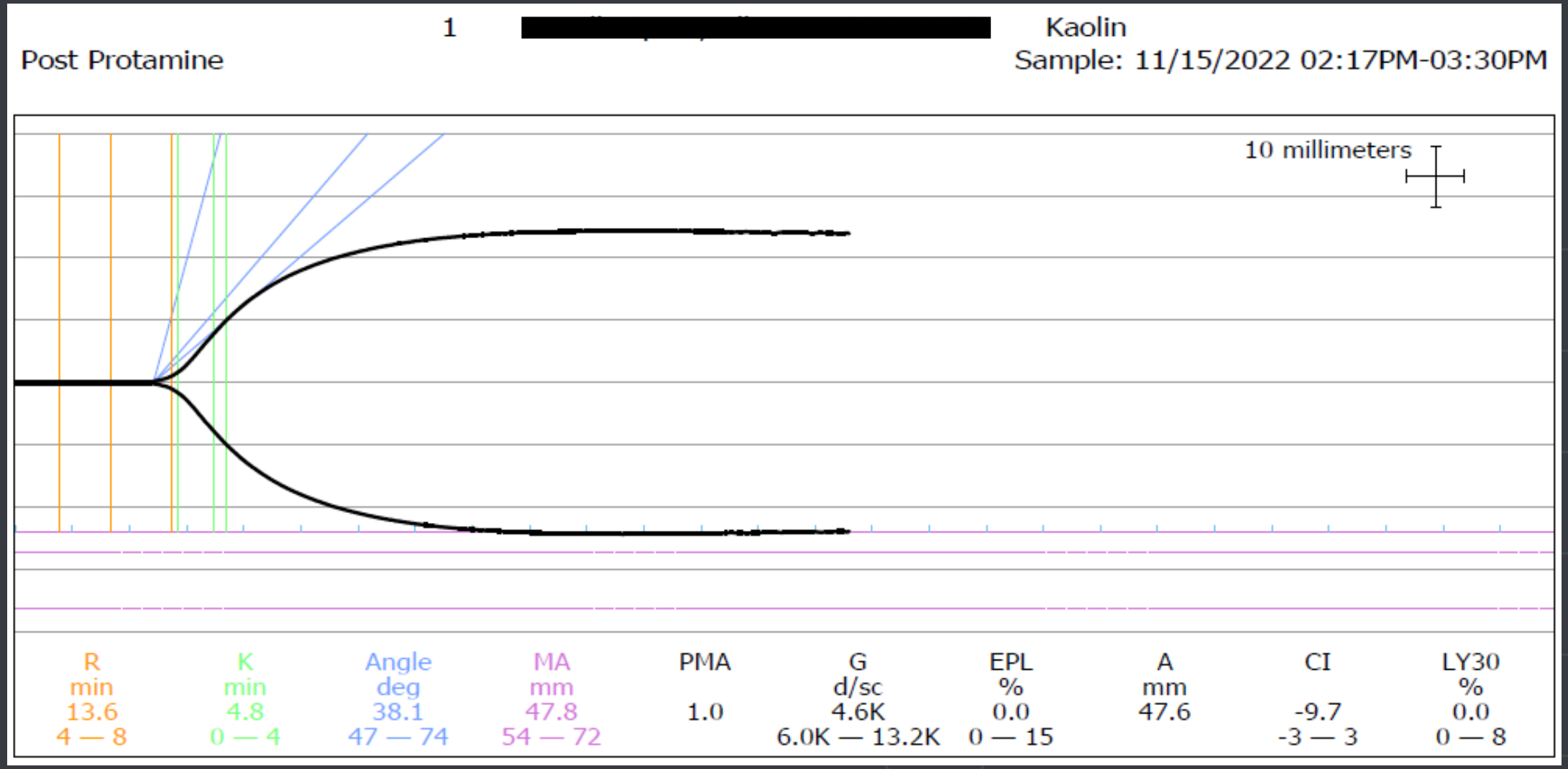
Case Reports

- Aortic Arch Hypoplasia
  - Arch Augmentation

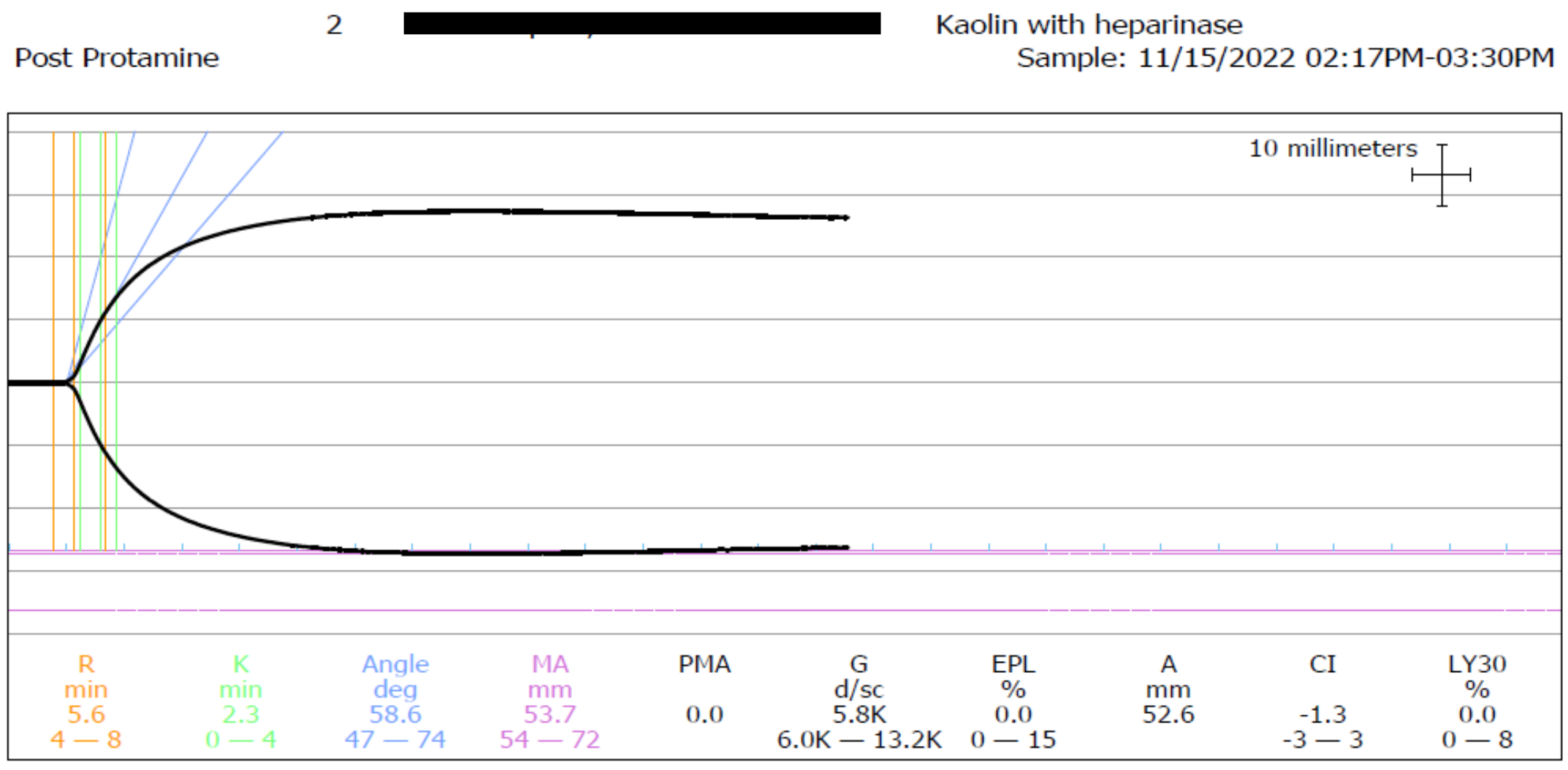




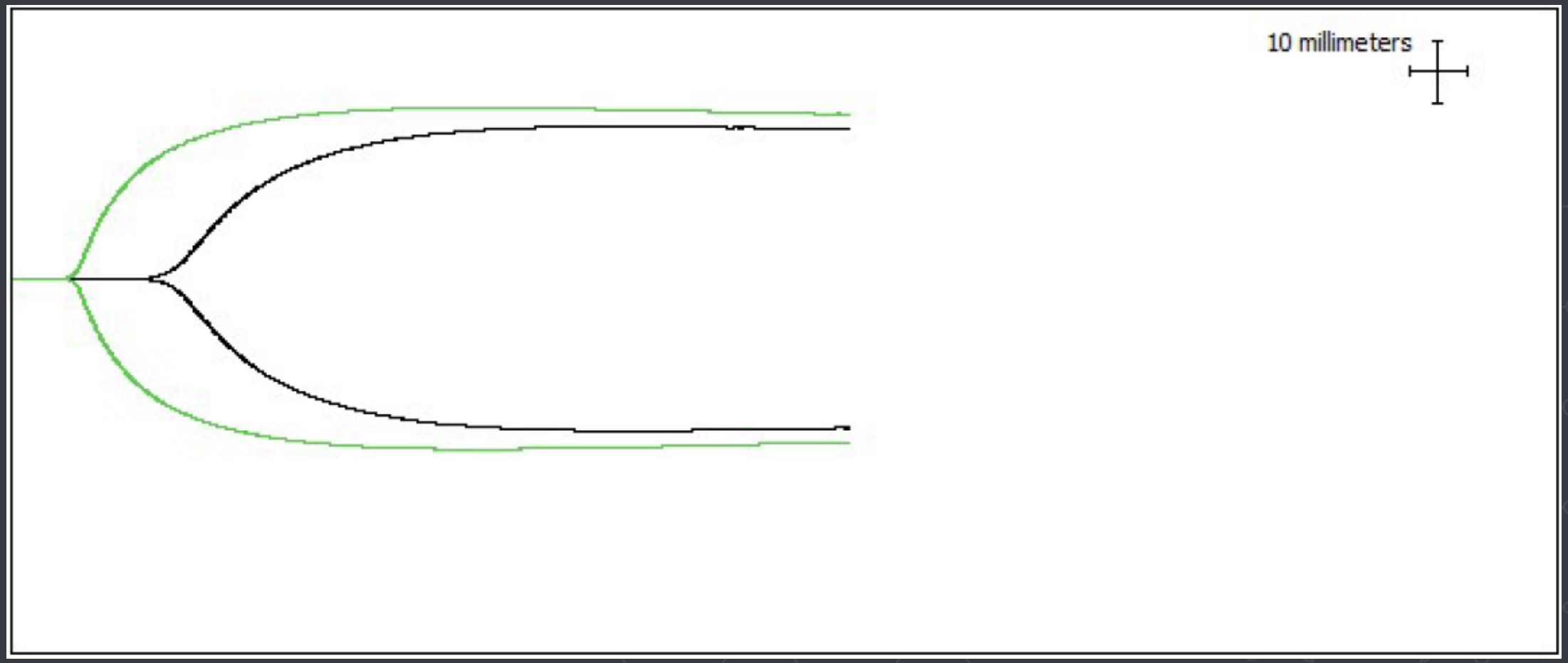
Aortic Arch Repair, Kaolin



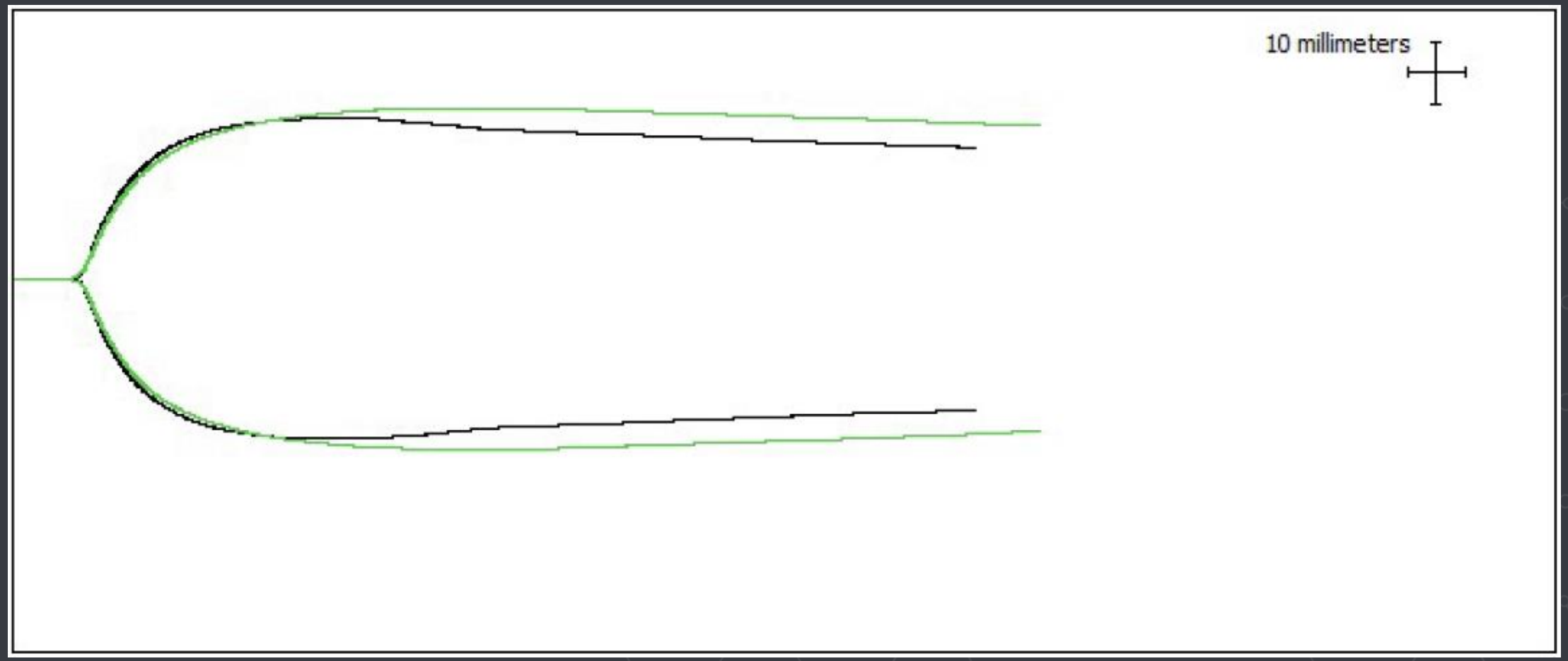
Aortic Arch Repair, Kaolin + Heparinase



Aortic Arch Repair, Residual Heparin Effect



Aortic Arch Repair, Added Protamine, No Heparin



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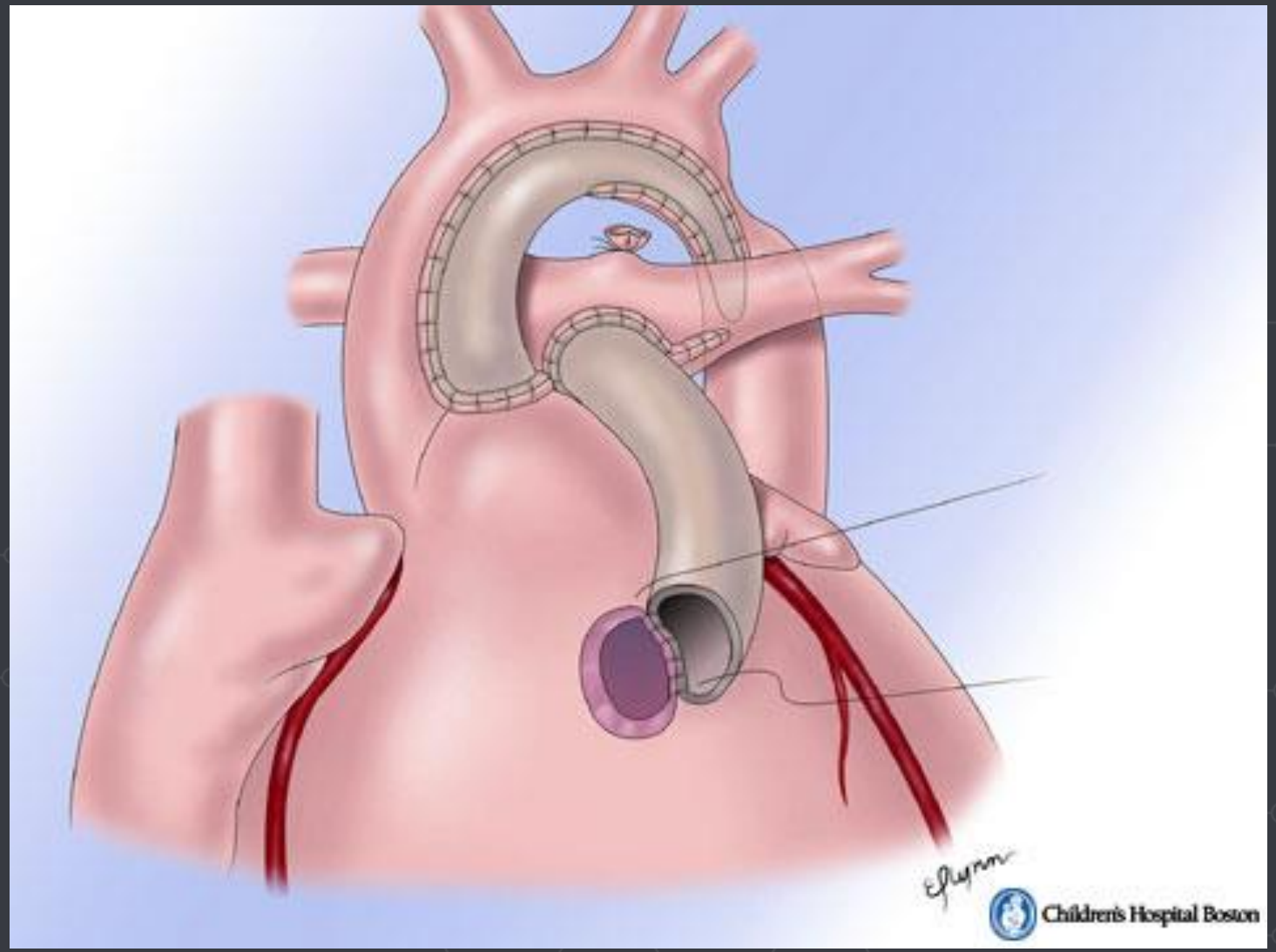
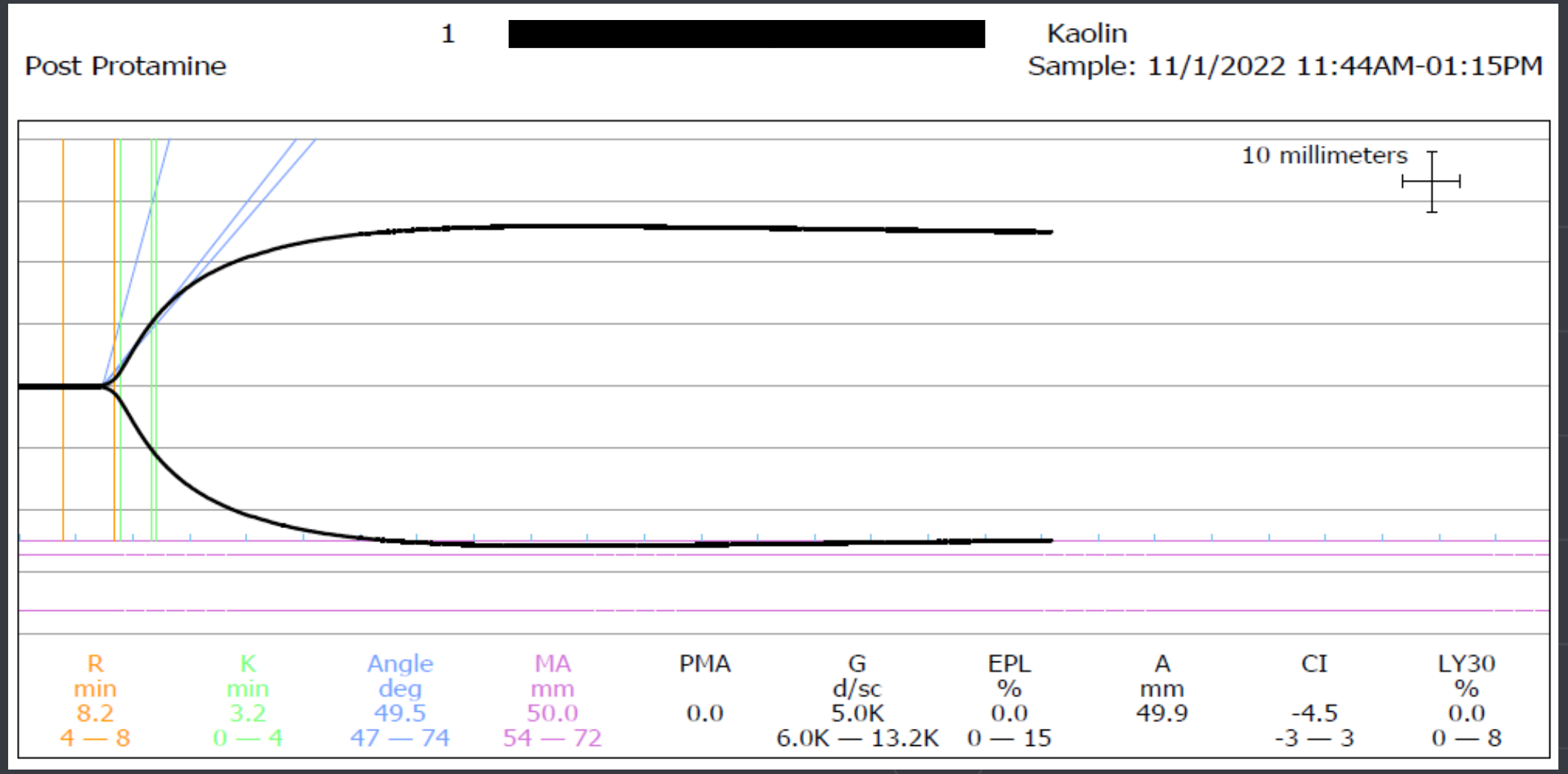
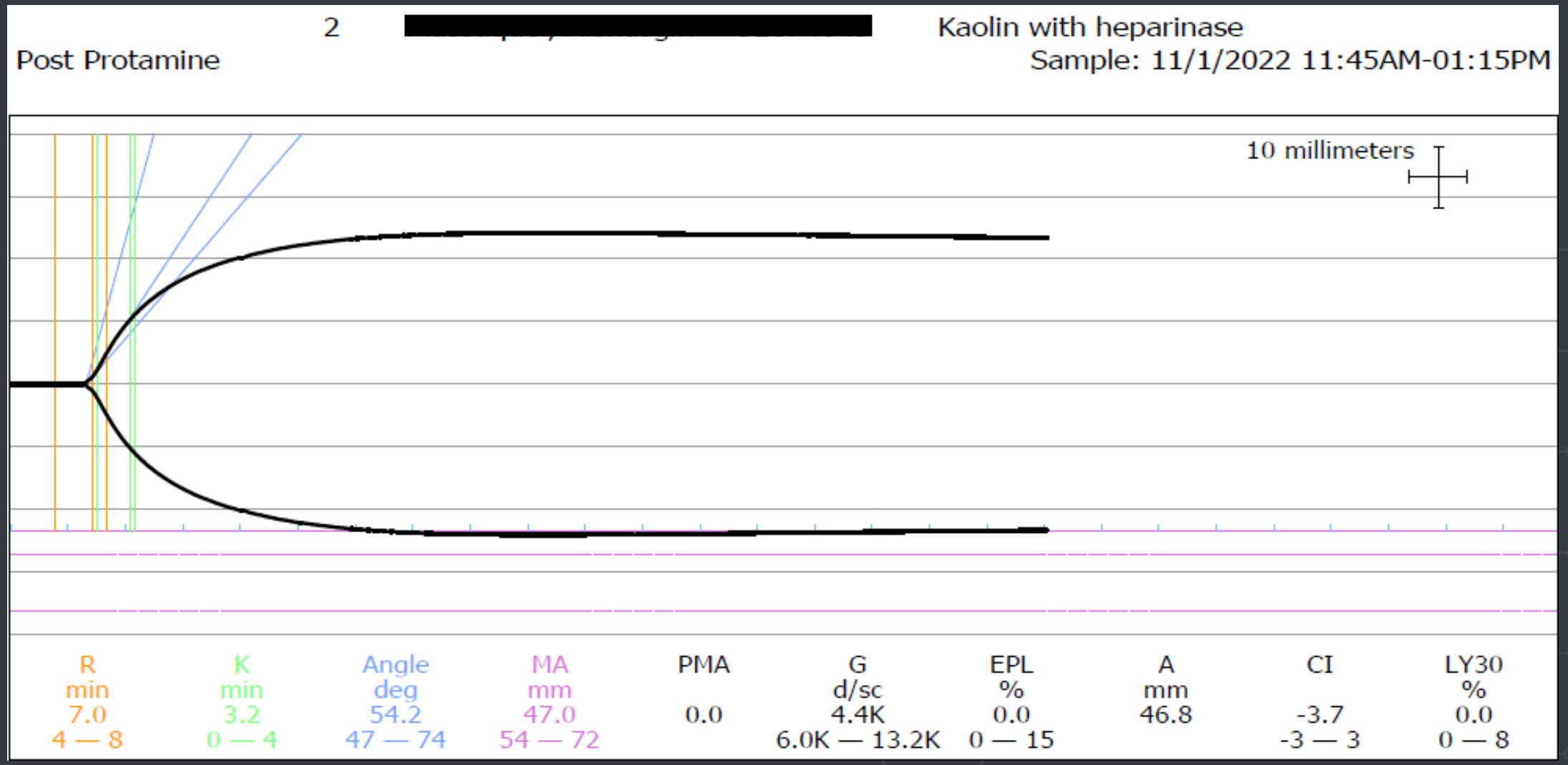
- Hypoplastic Left Heart Syndrome
  - Stage One Norwood Procedure


Children's Hospital Boston

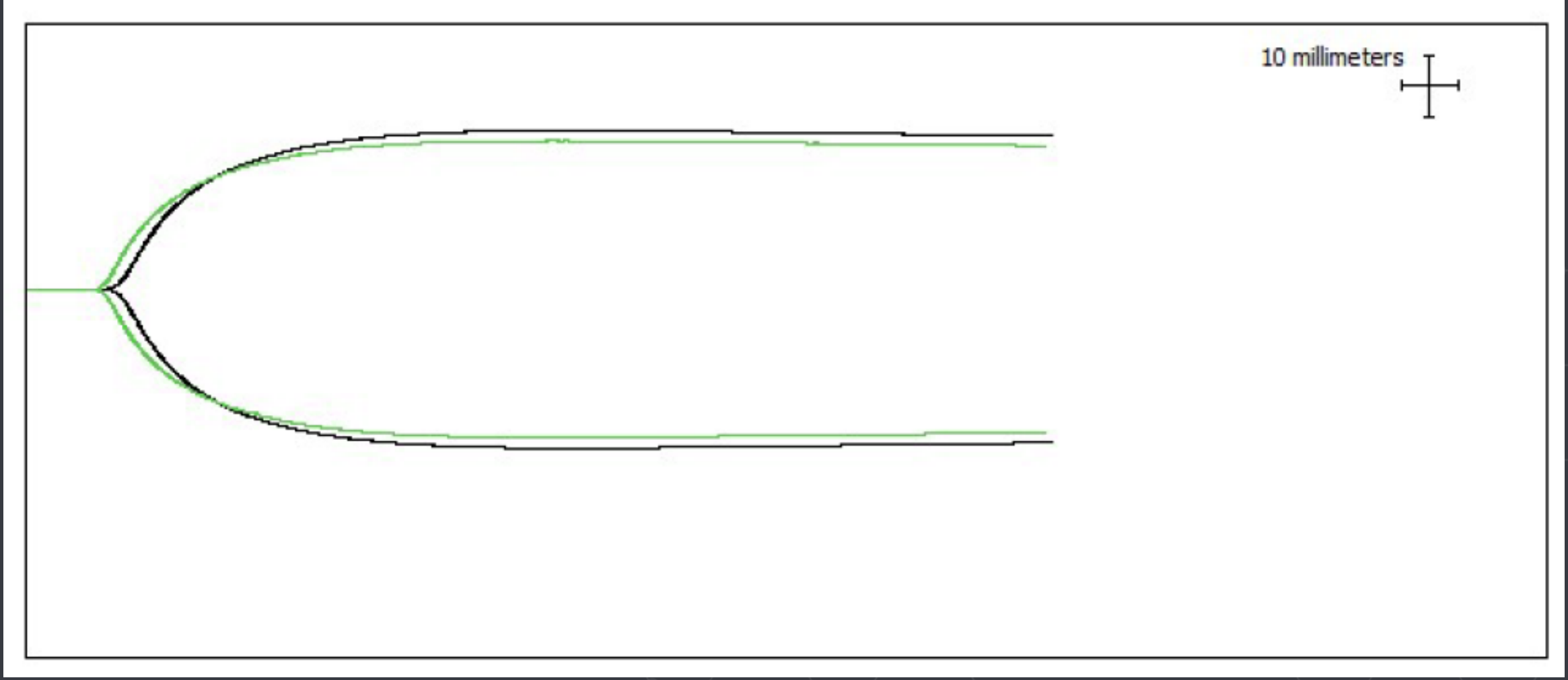
HLHS, Kaolin Post-protamine



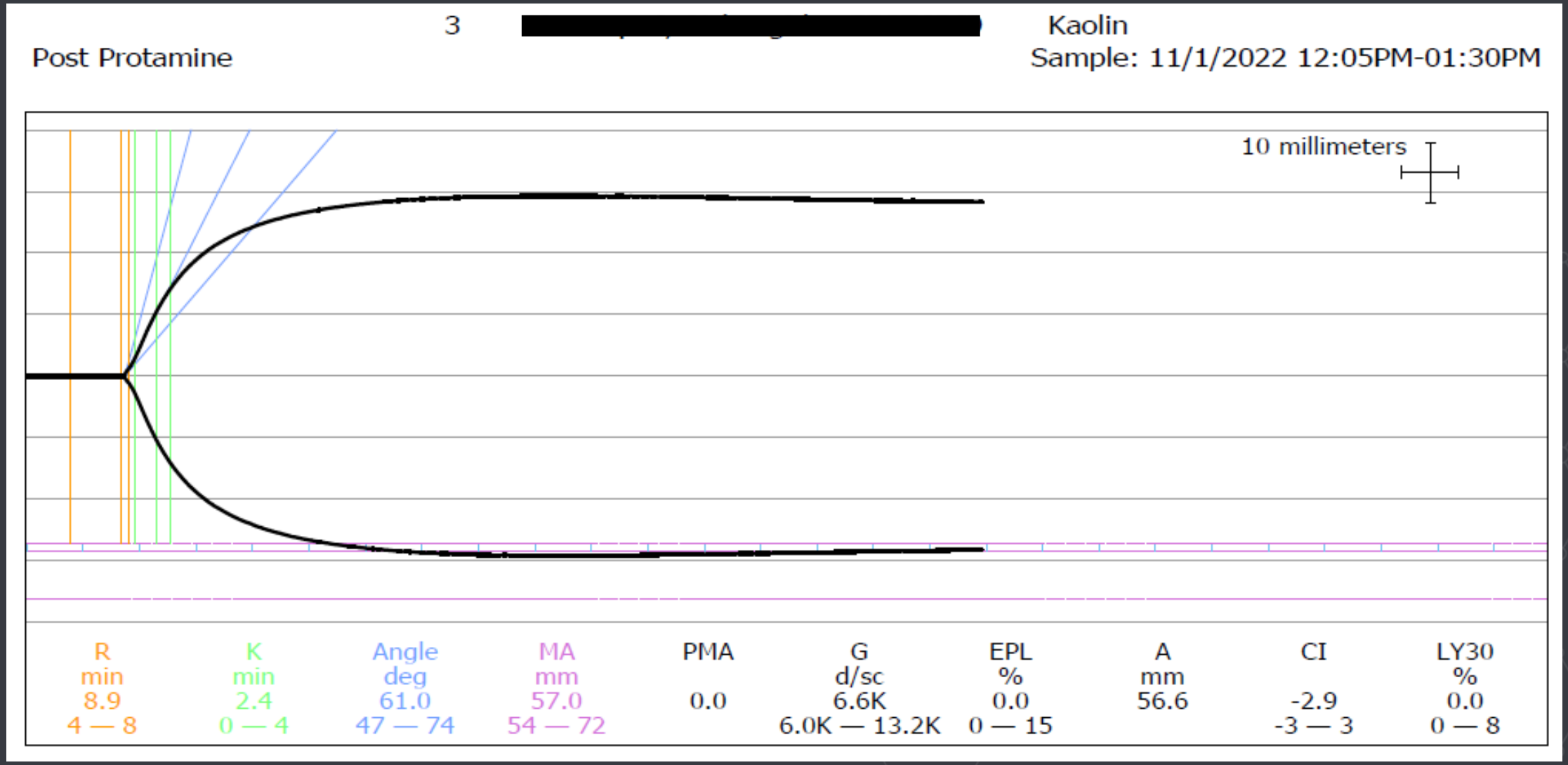
HLHS, Kaolin + Heparinase Post-protamine



HLHS, Post-Protamine Heparin Effect



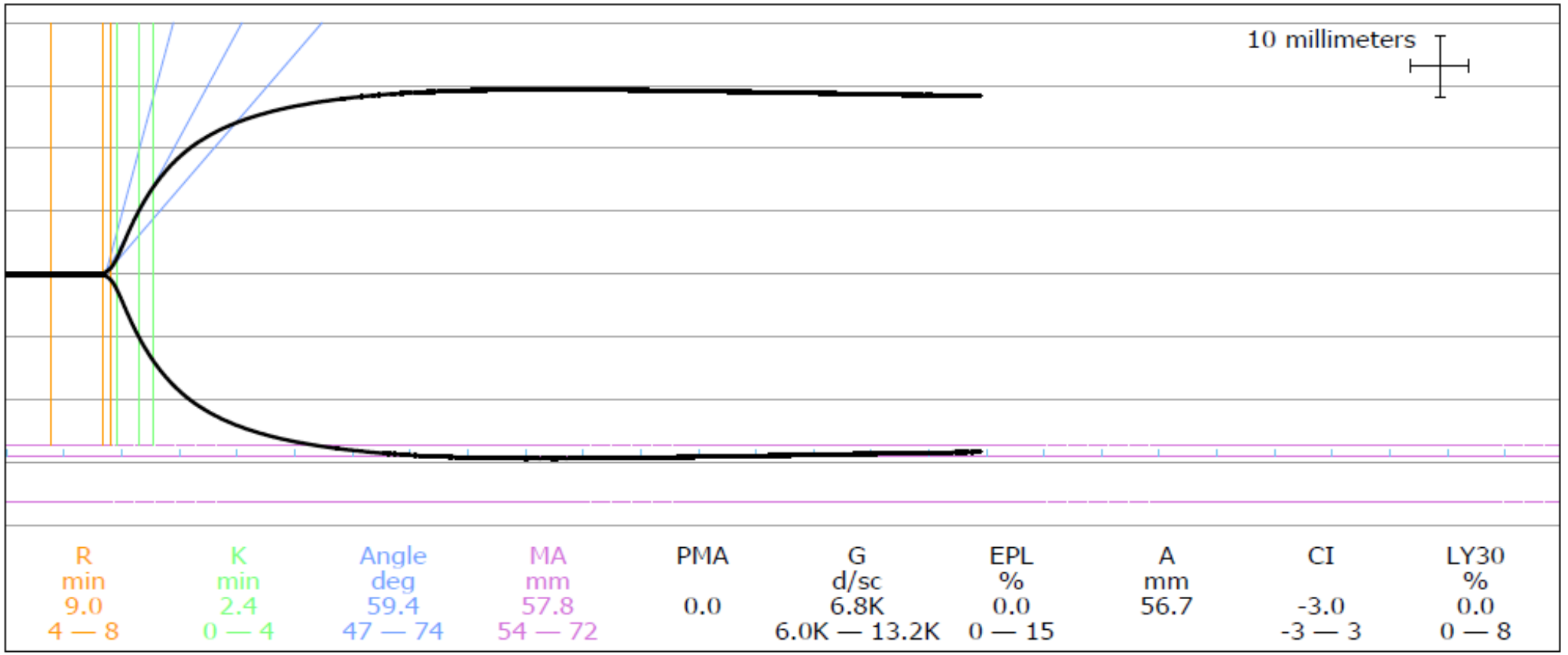
HLHS, Additional Protamine, Kaolin



HLHS, Additional Protamine, Heparinase

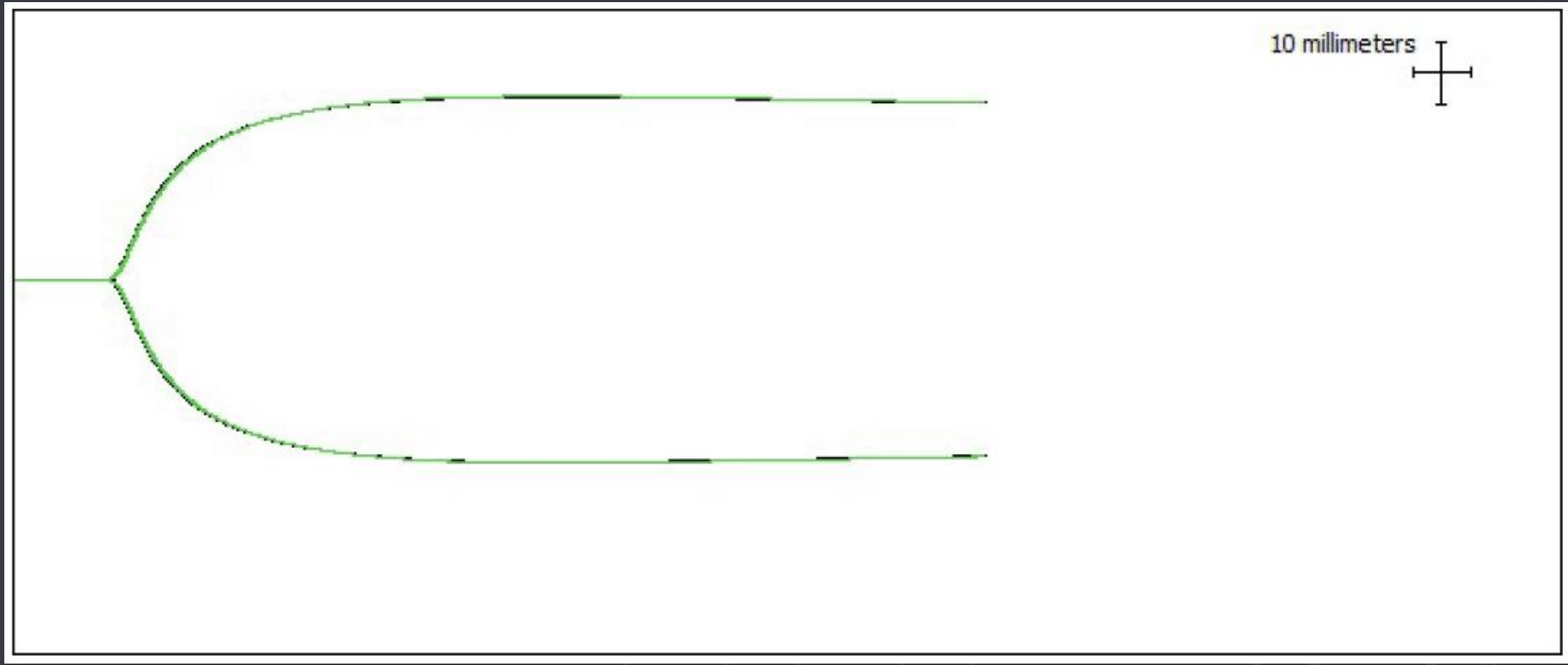
4 [redacted] Kaolin with heparinase

Post Protamine Sample: 11/1/2022 12:06PM-01:30PM

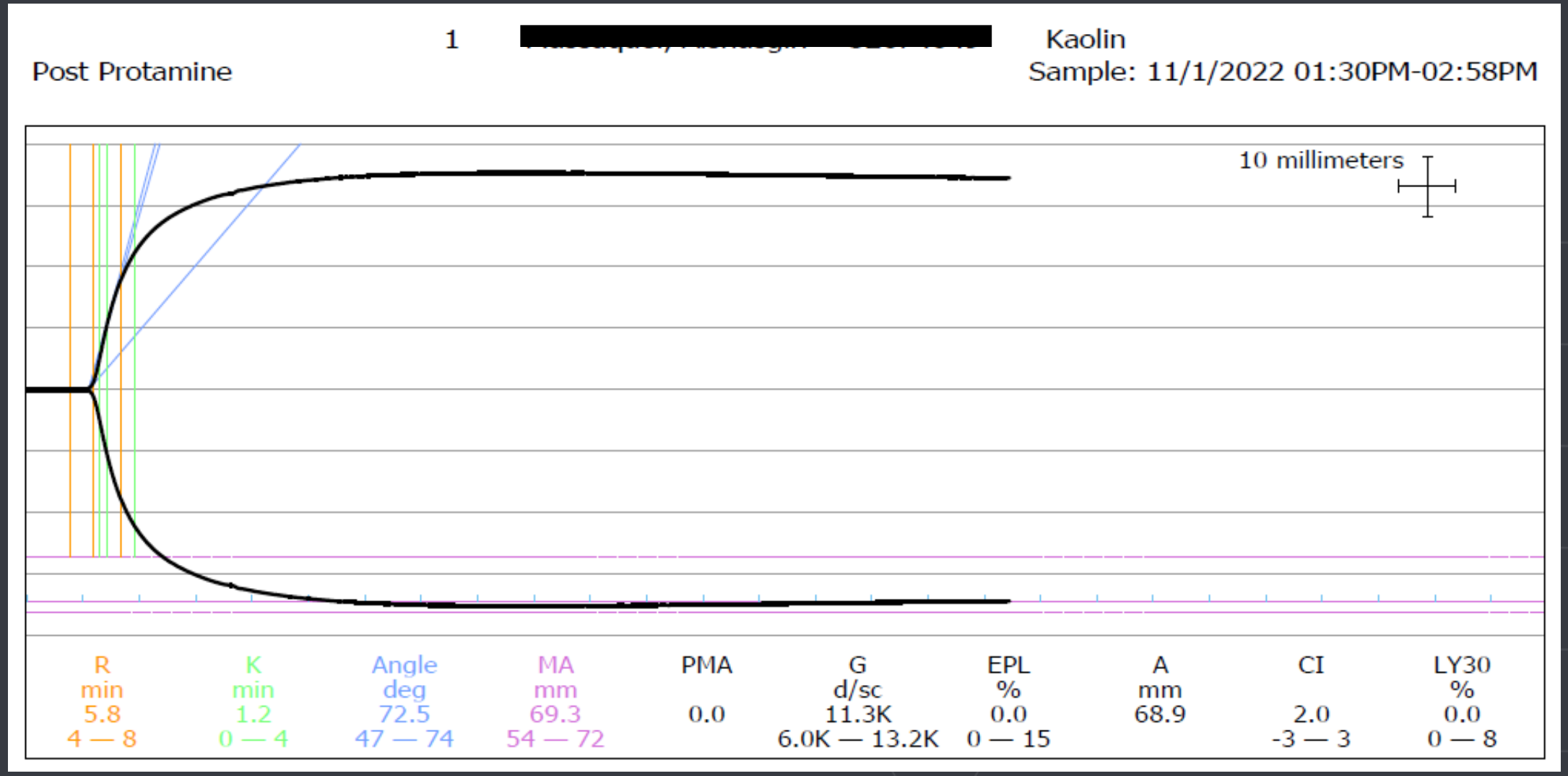


R	K	Angle	MA	PMA	G	EPL	A	CI	LY30
min	min	deg	mm		d/sc	%	mm		%
9.0	2.4	59.4	57.8	0.0	6.8K	0.0	56.7	-3.0	0.0
4 — 8	0 — 4	47 — 74	54 — 72		6.0K — 13.2K	0 — 15		-3 — 3	0 — 8

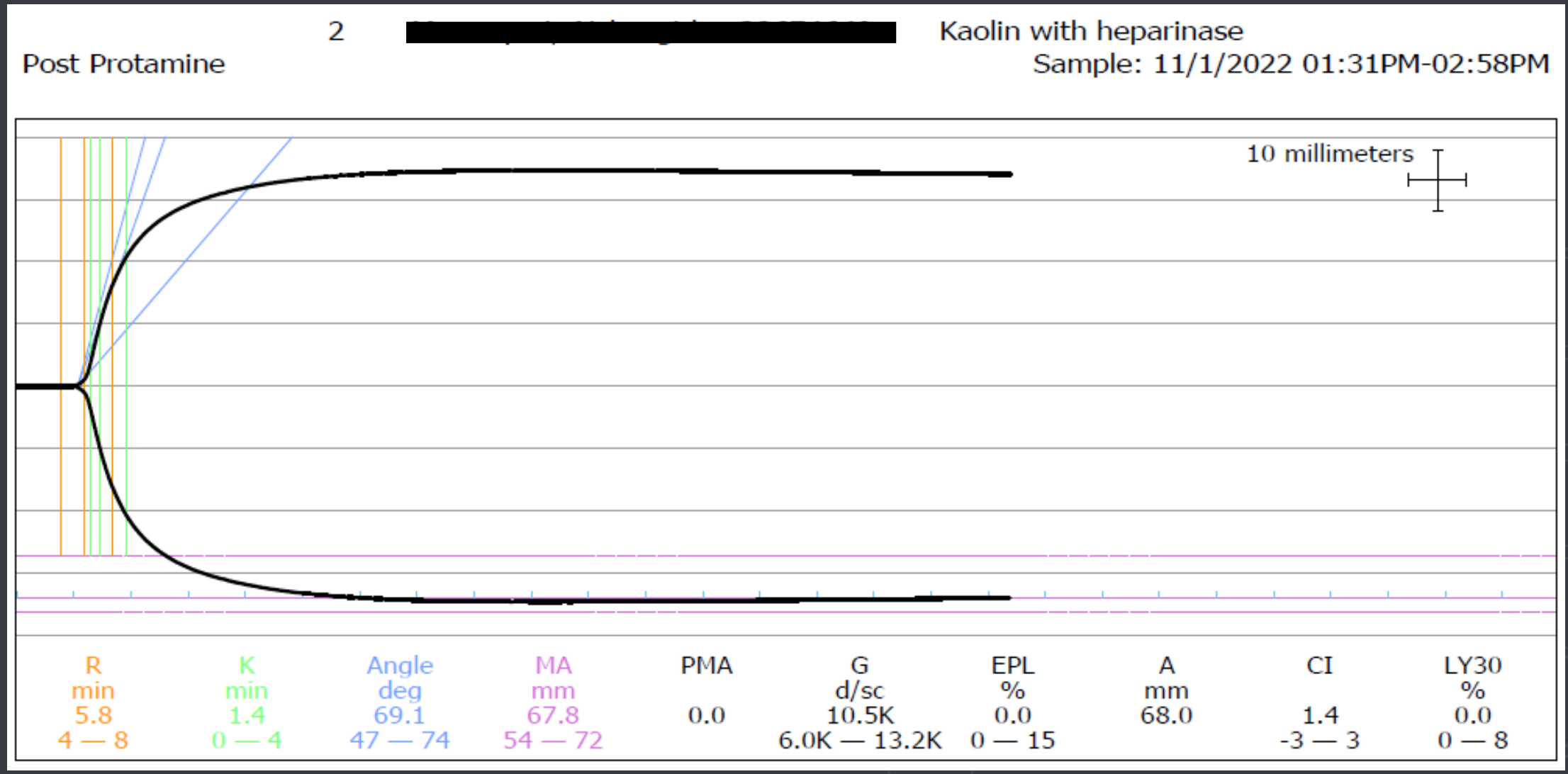
HLHS, Additional Protamine, No Heparin Effect



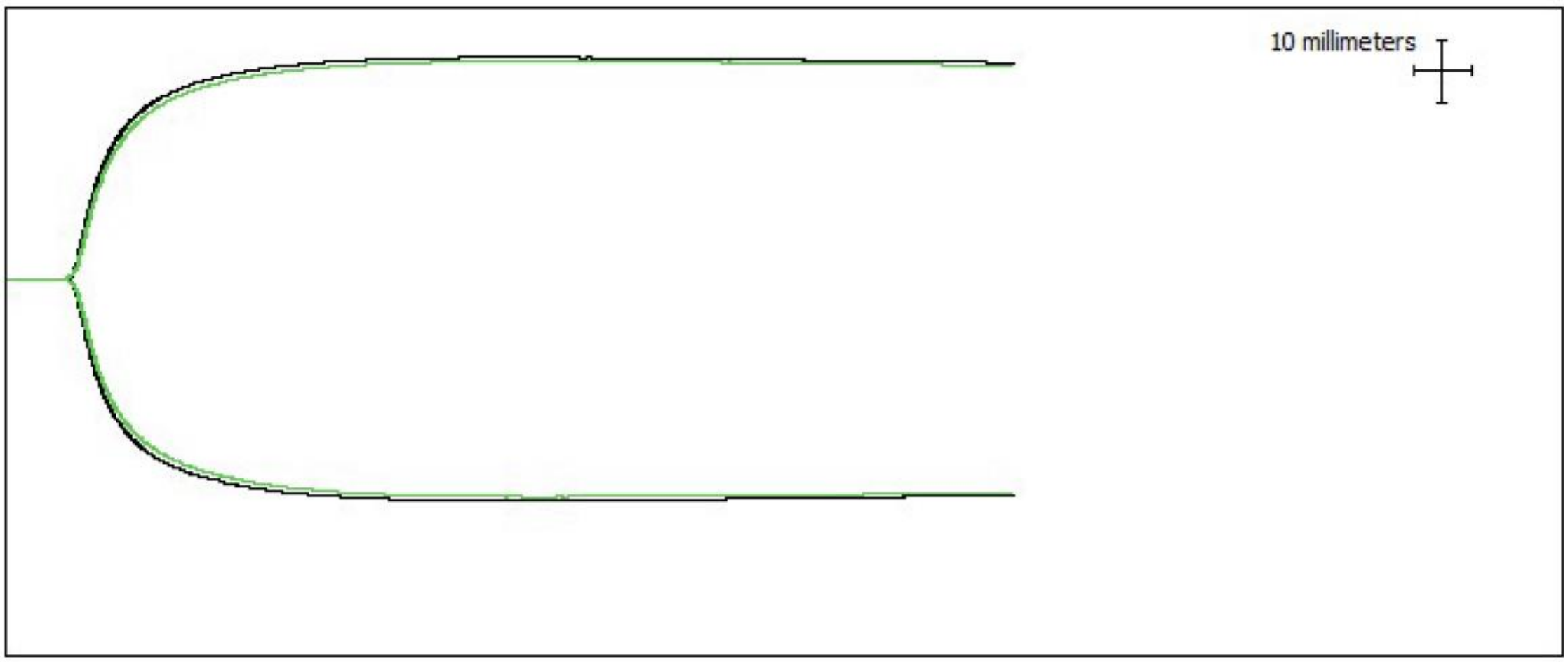
HLHS, Protamine, Platelets, Kaolin



HLHS, Protamine, Platelets, Kaolin + Heparinase



HLHS, Protamine, Platelets, No Heparin Effect



HLHS, TEG Normalization

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- Hypoplastic Left Heart Syndrome
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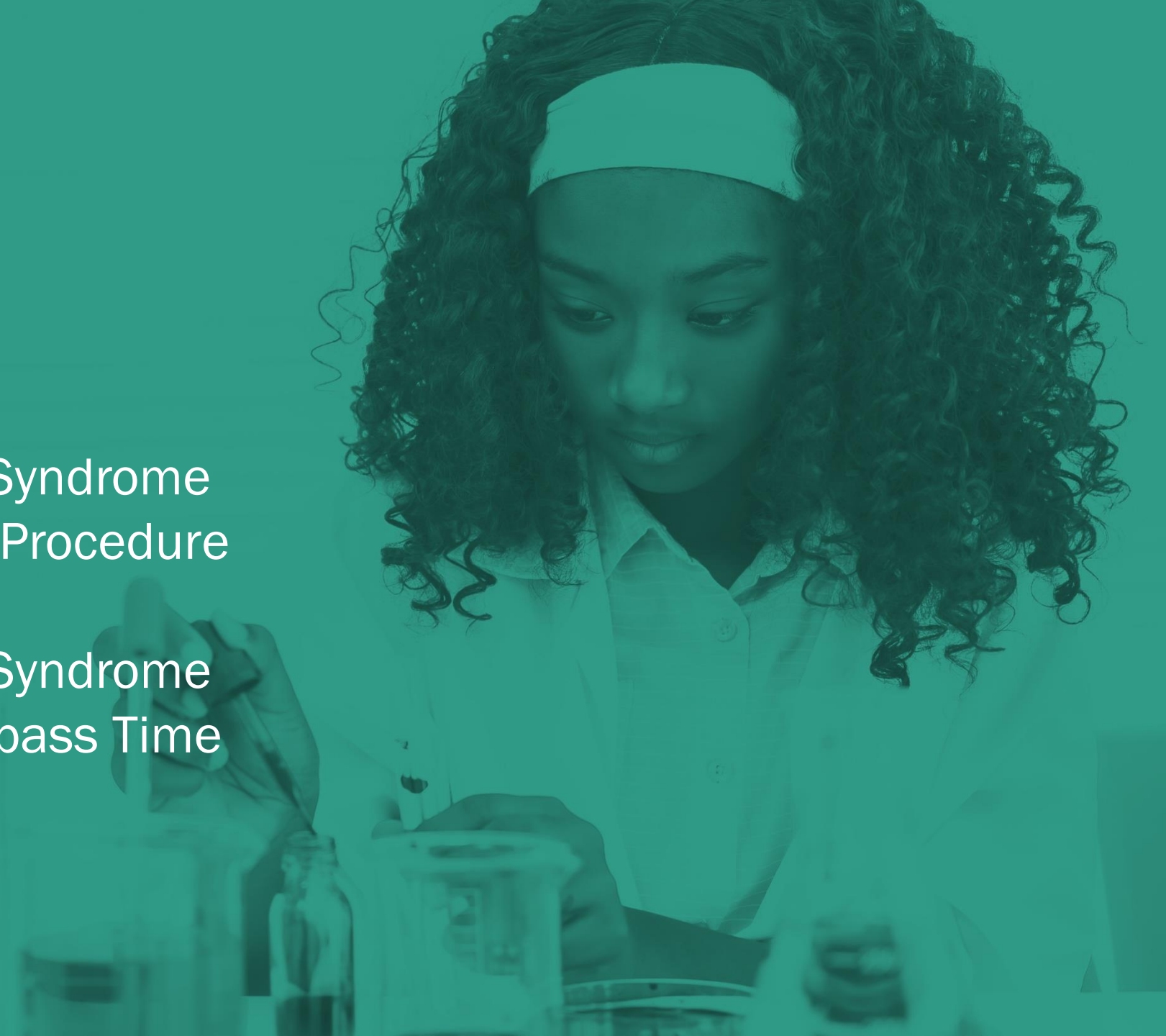
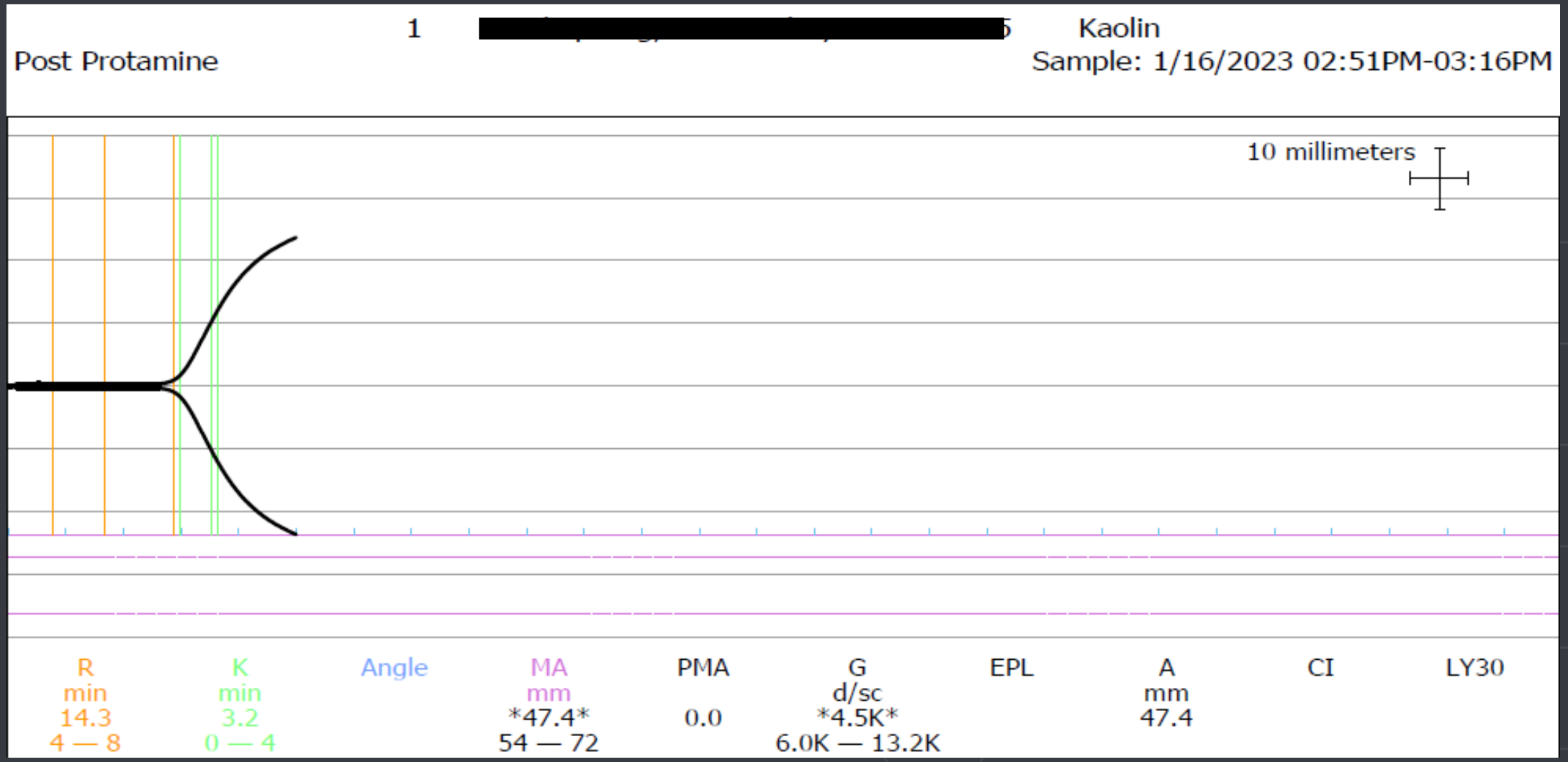
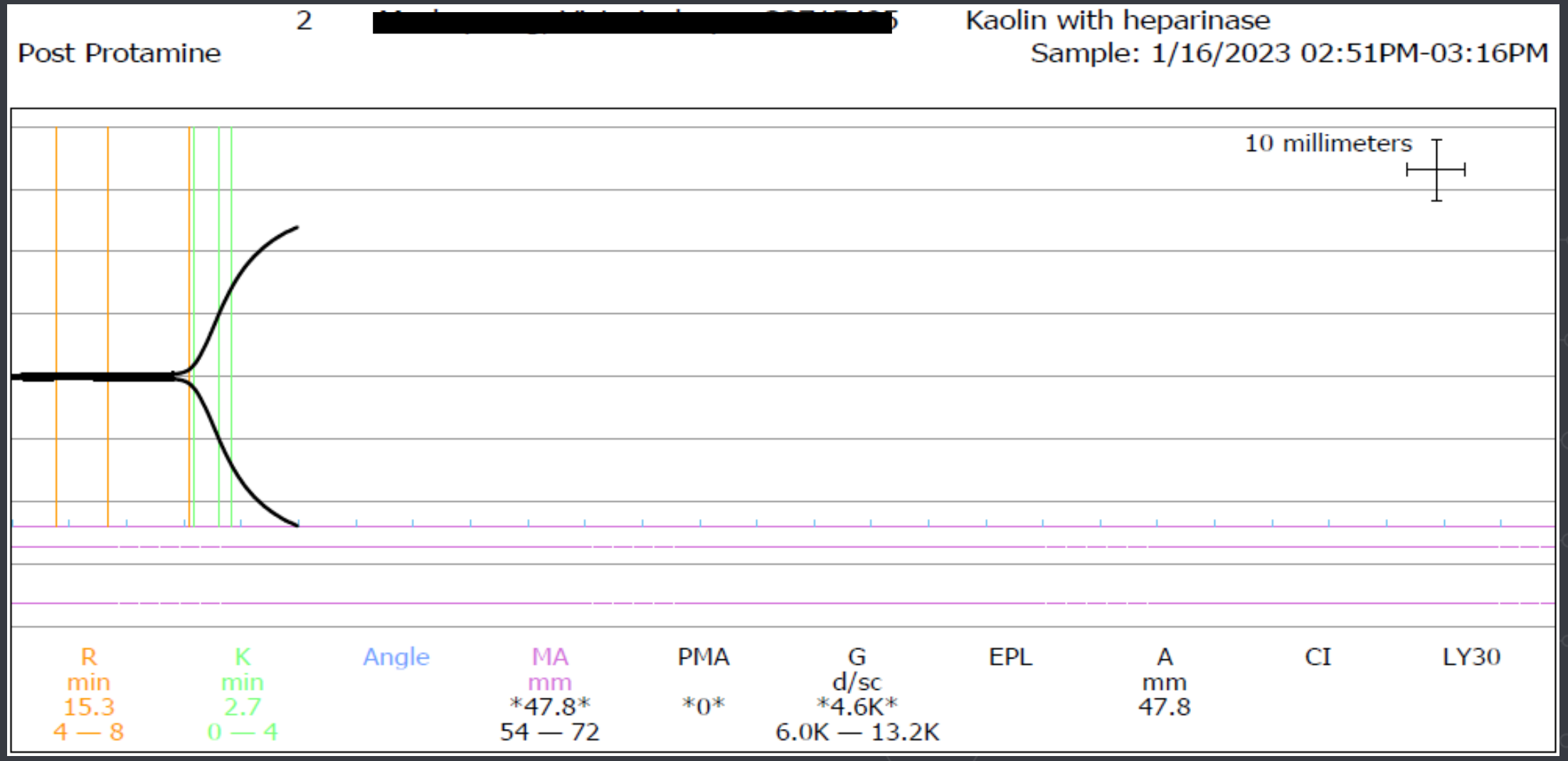


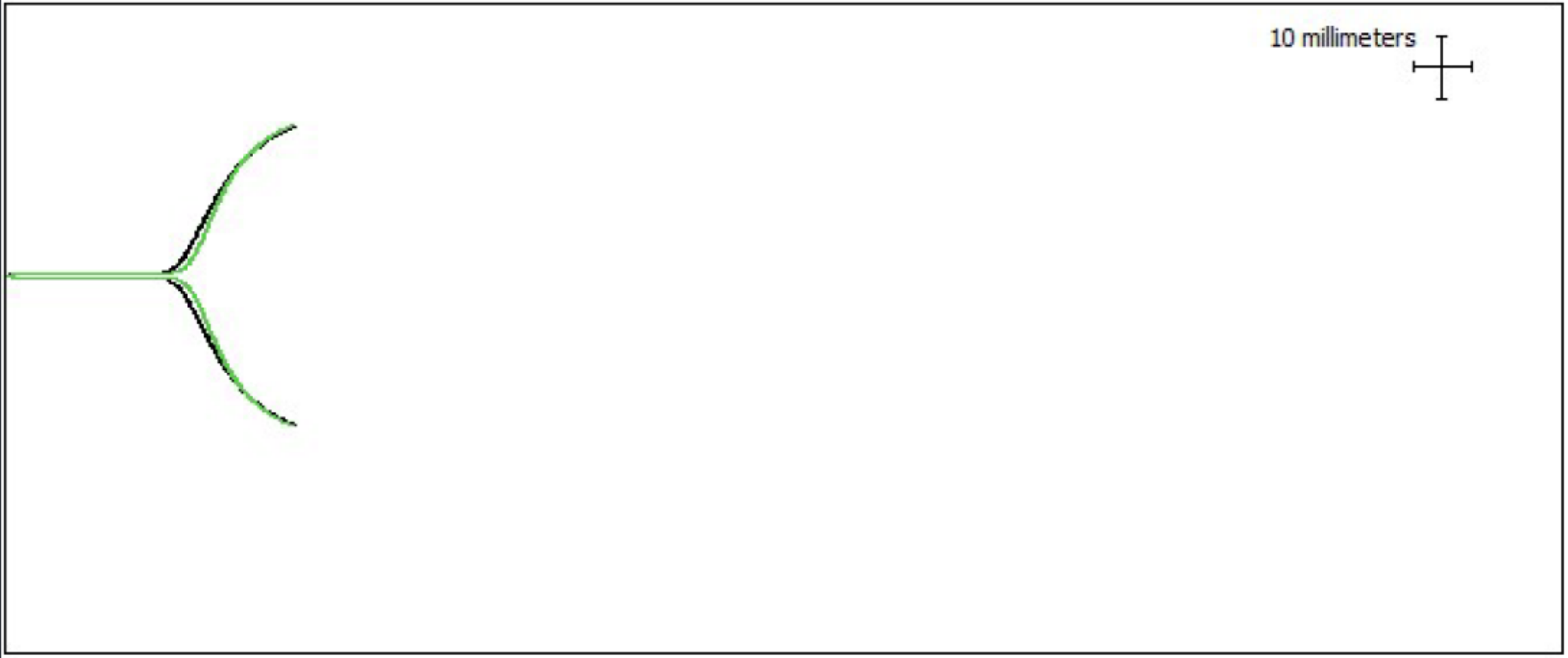
HLHS 2, Post Protamine Kaolin



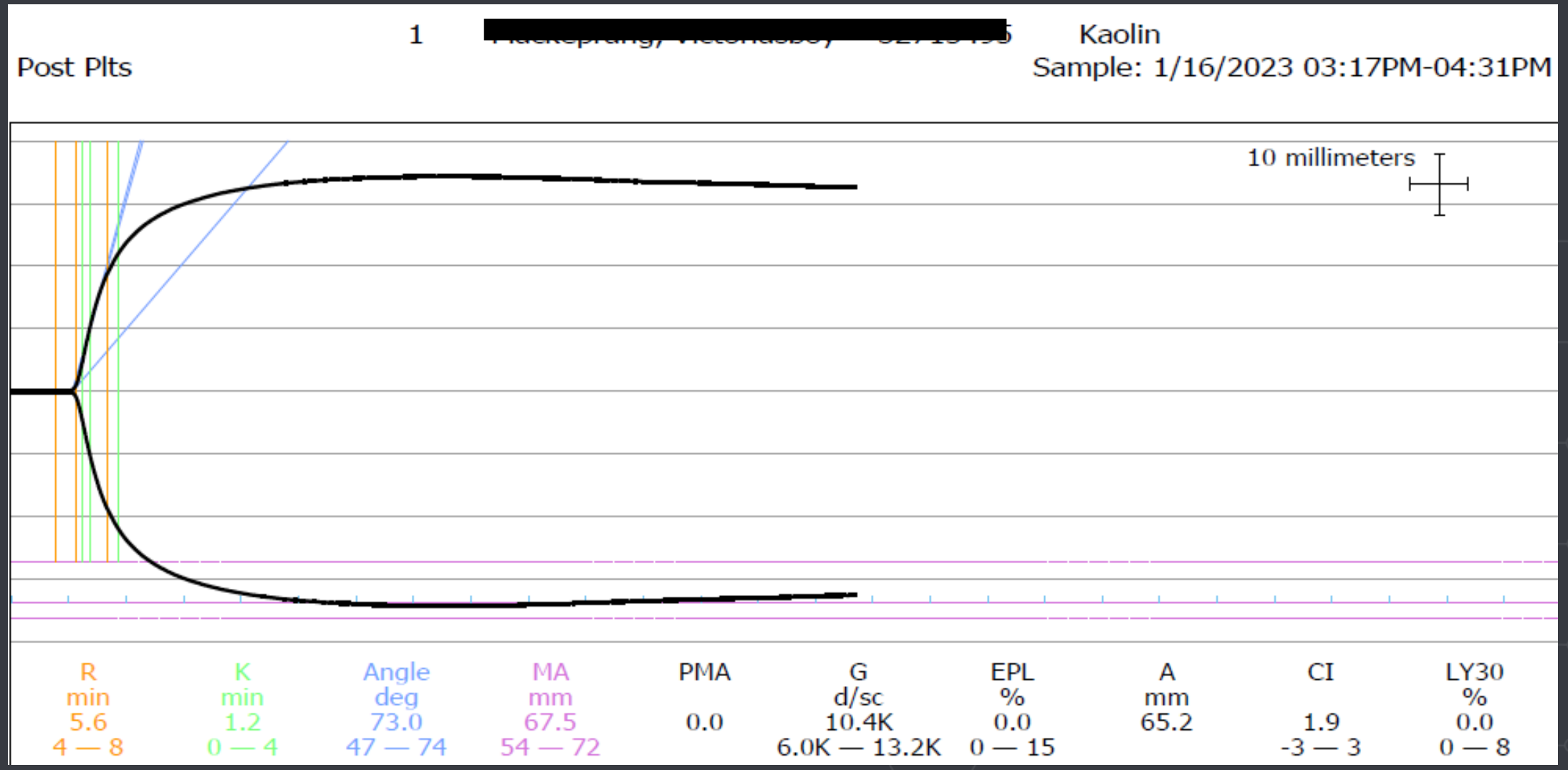
HLHS 2, Post Protamine Heparinase



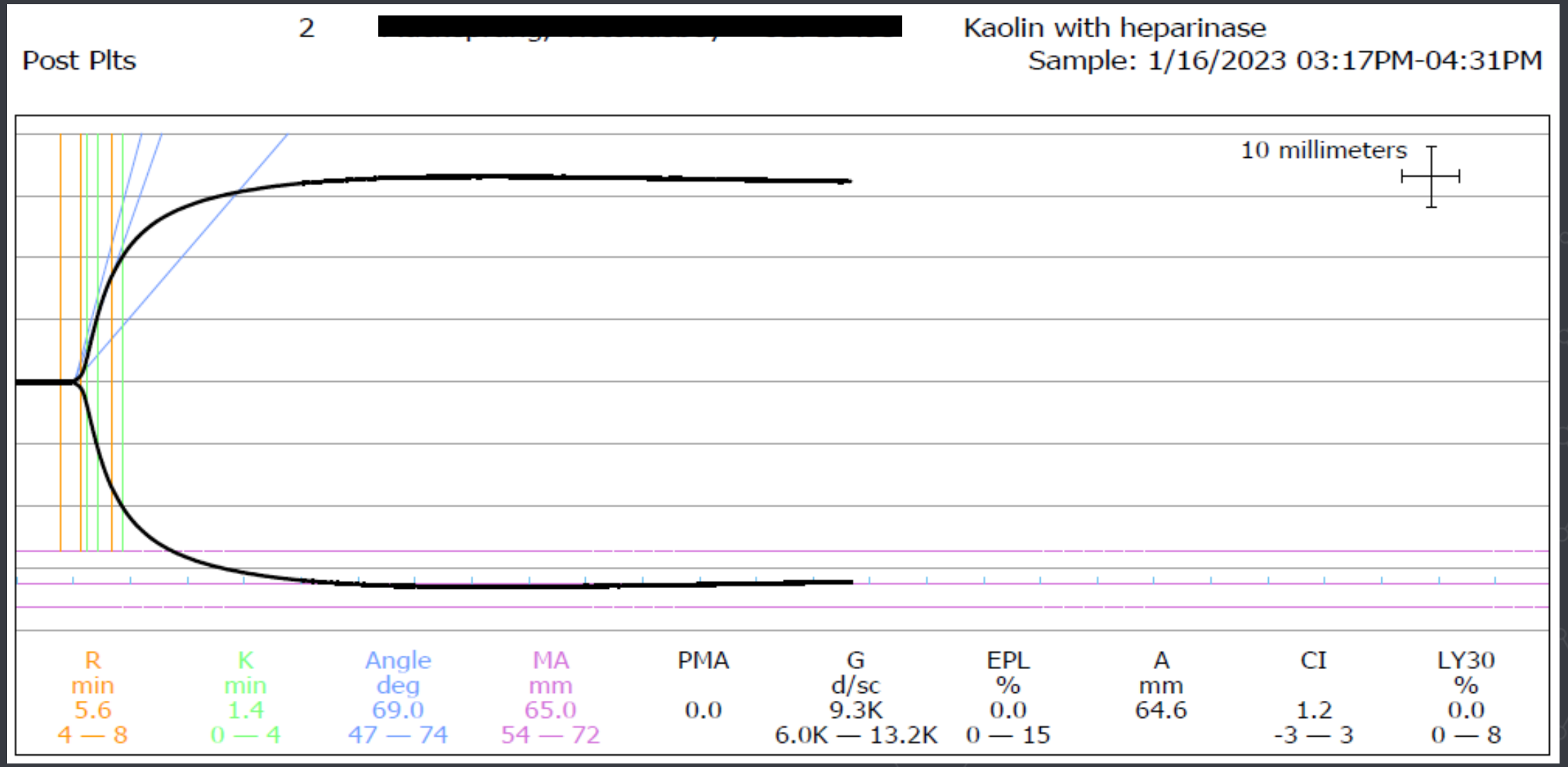
HLHS 2, Post Protamine, Minimal Heparin



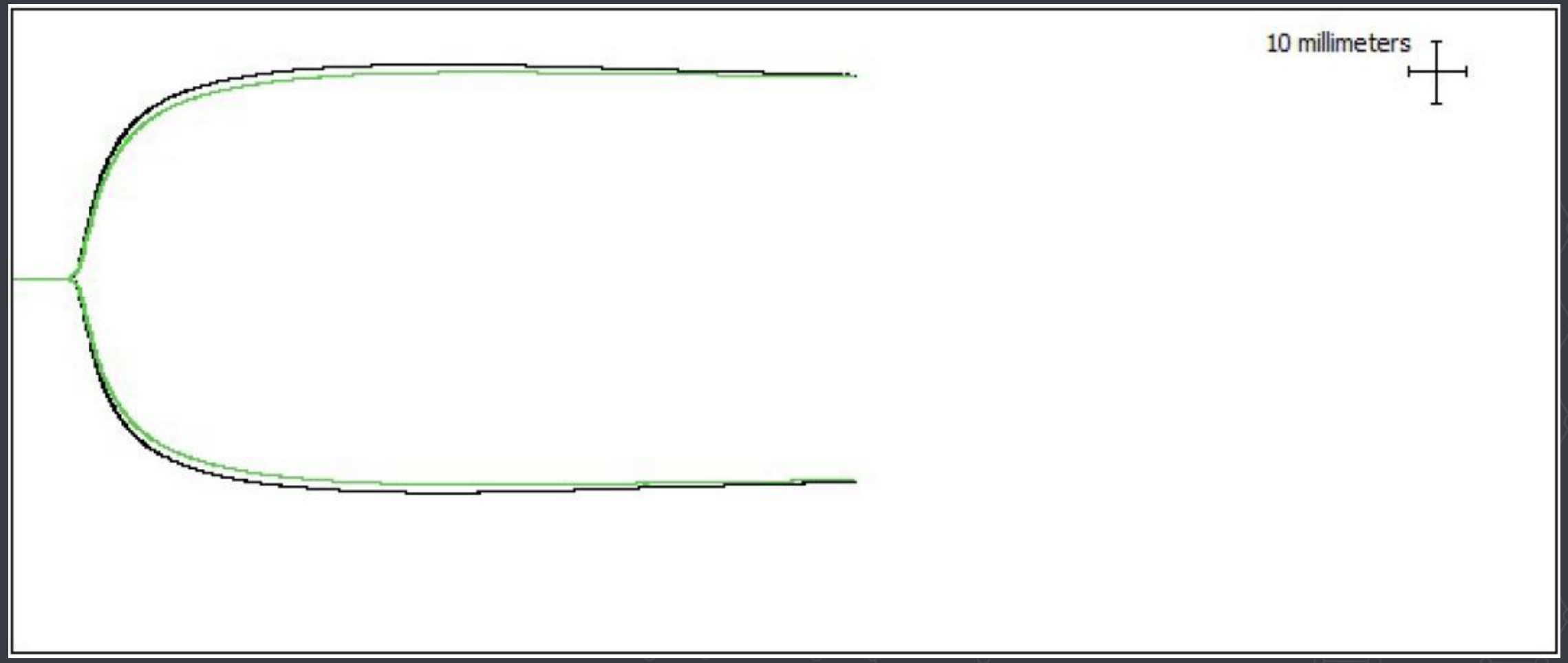
HLHS 2, Platelets + FFP, Kaolin



HLHS 2, Platelets + FFP, Heparinase



HLHS 2, Platelets + FFP, No Residual Heparin



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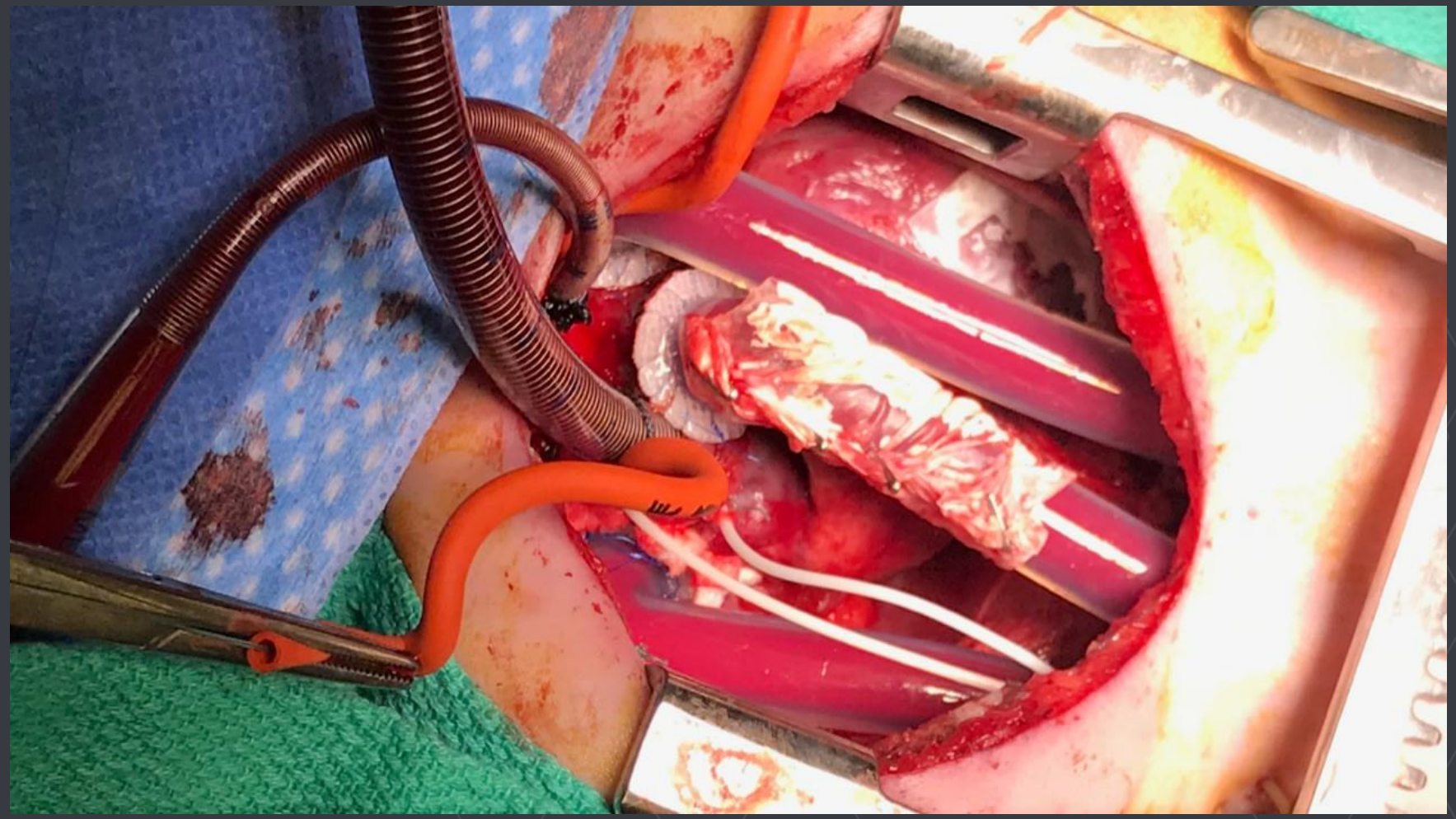
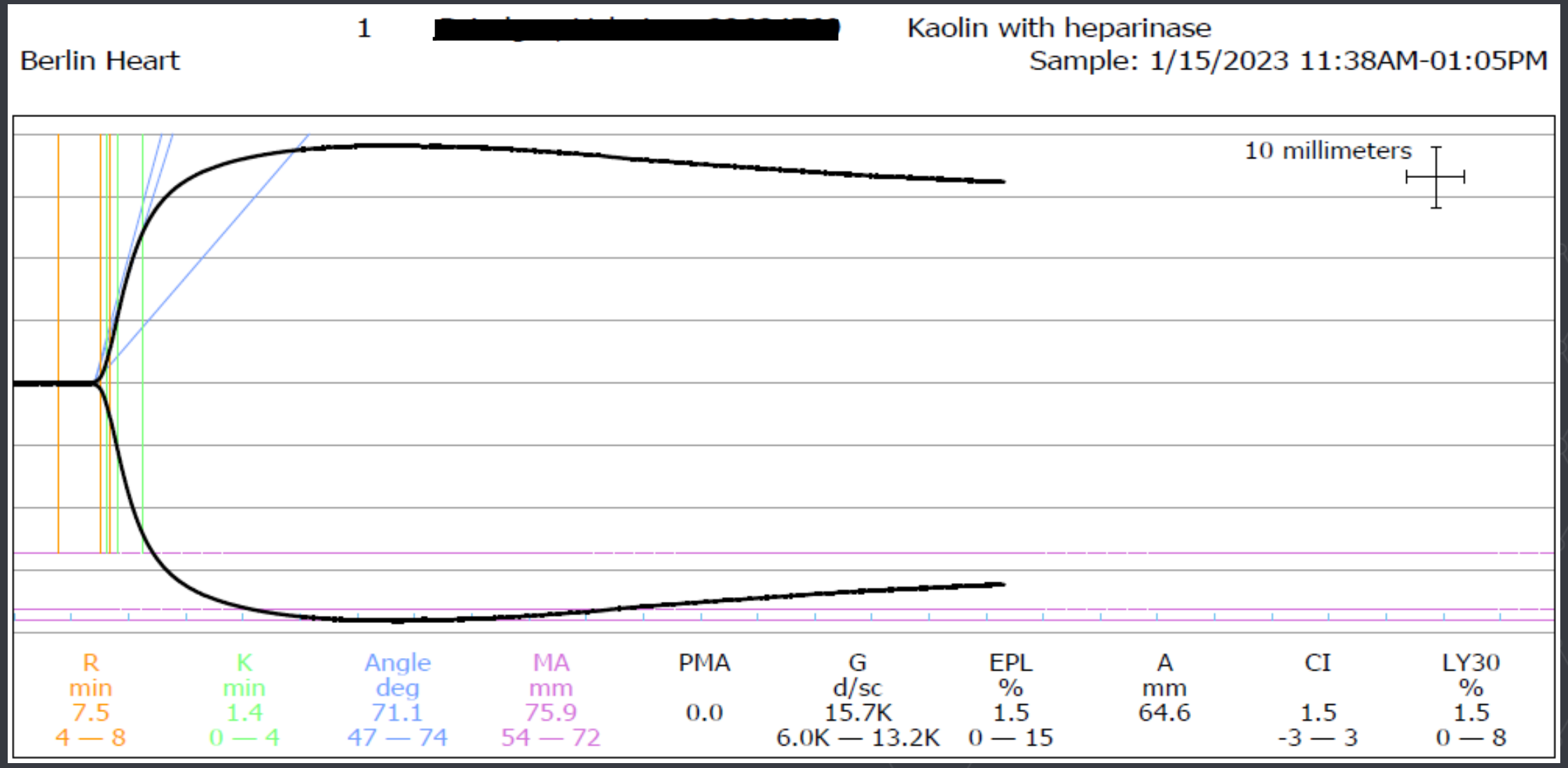
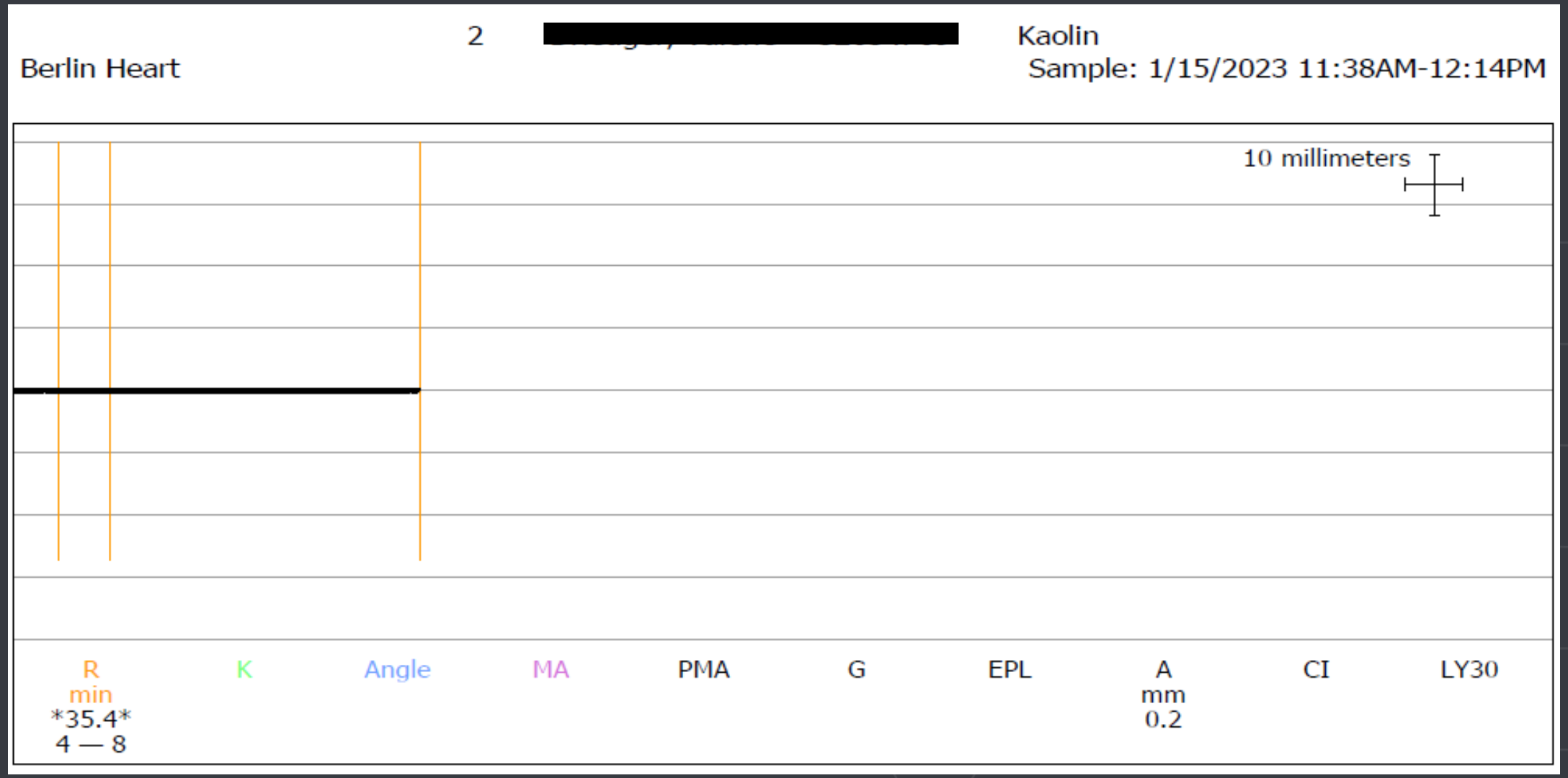


Berlin Heart, Heparinase



Berlin Heart, Kaolin (Desired Heparin Effect)



1
2
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Cardinal Healt
ES
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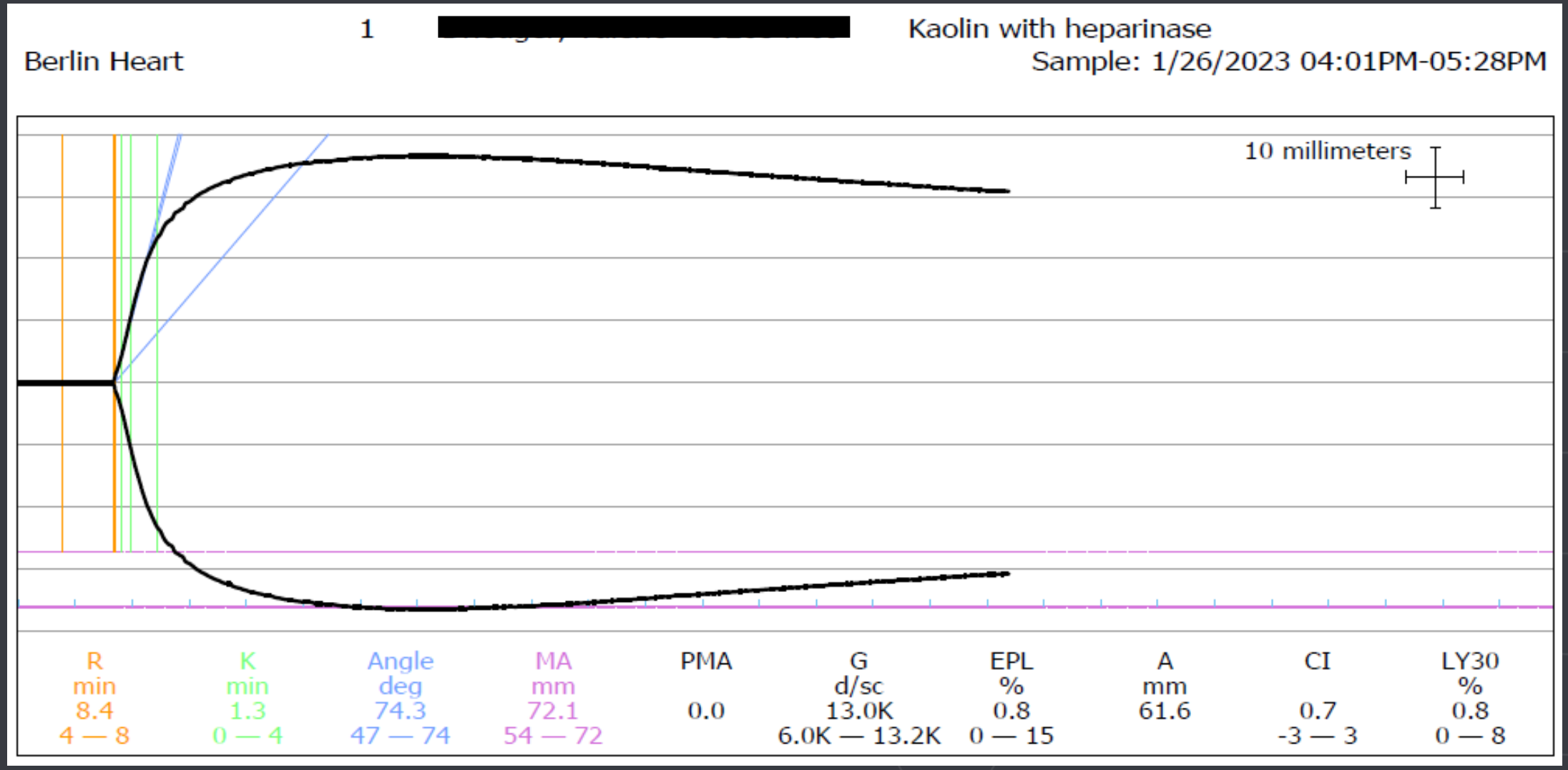
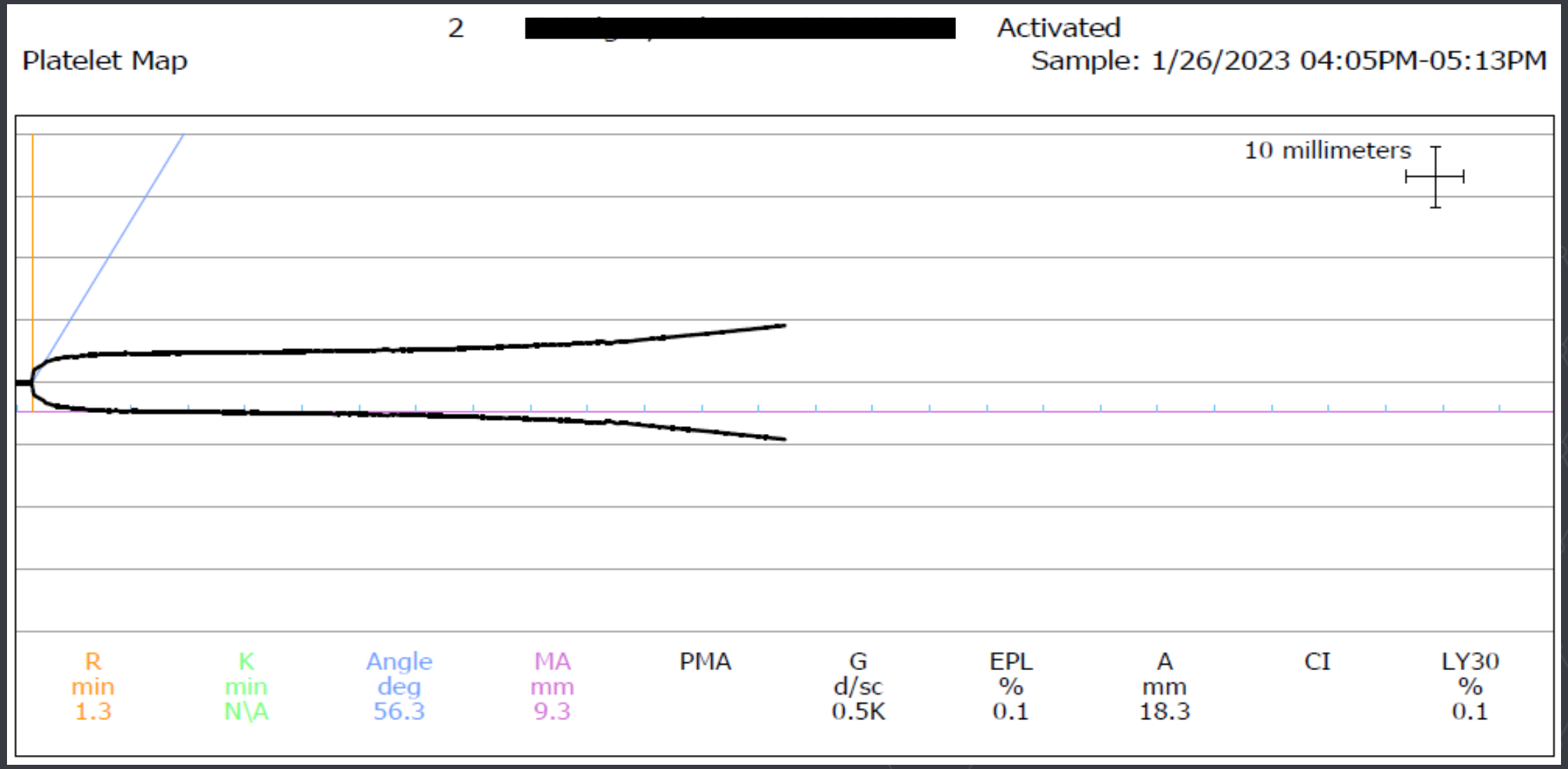
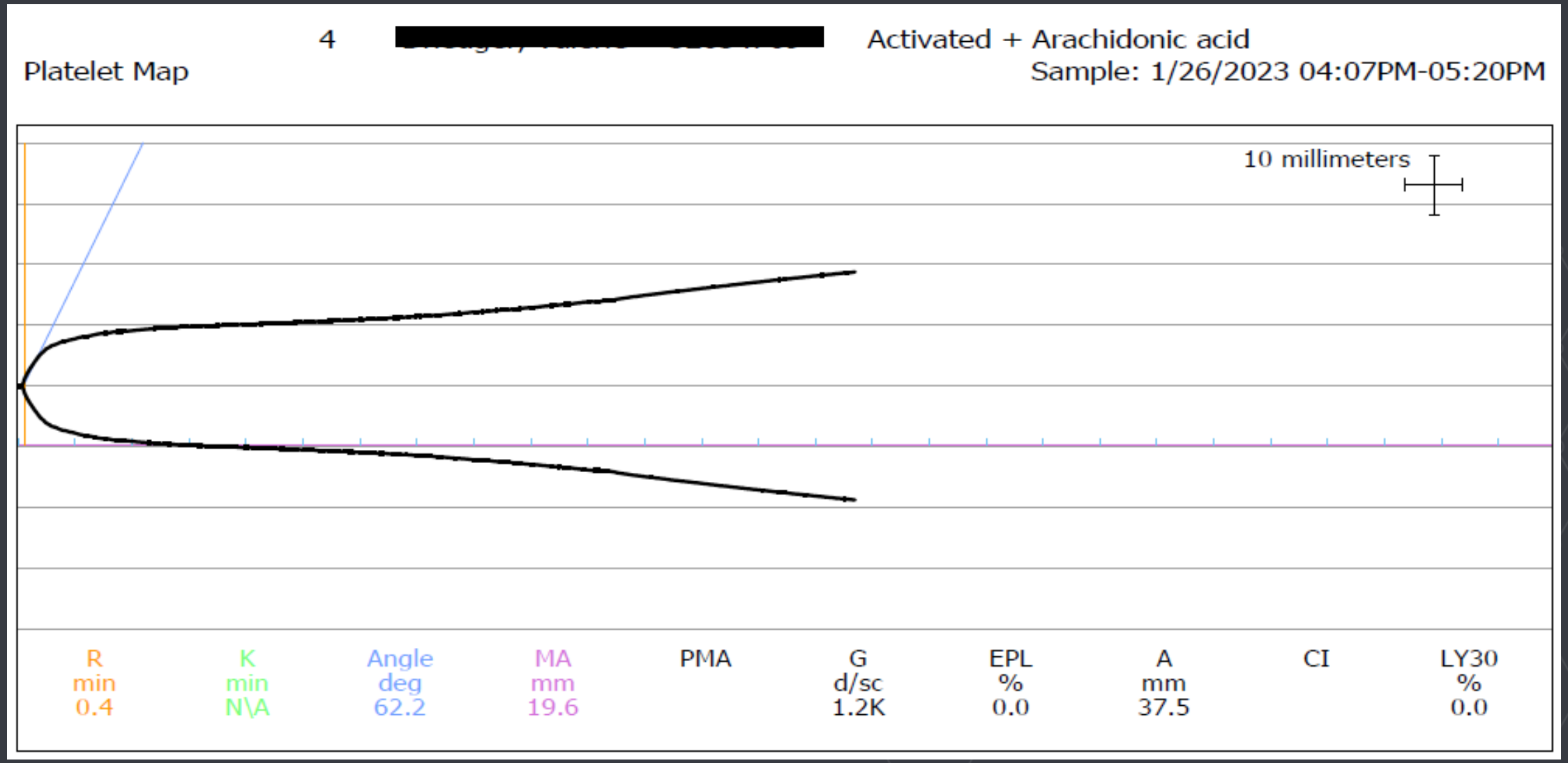
Platelet Mapping, Kaolin and Heparinase



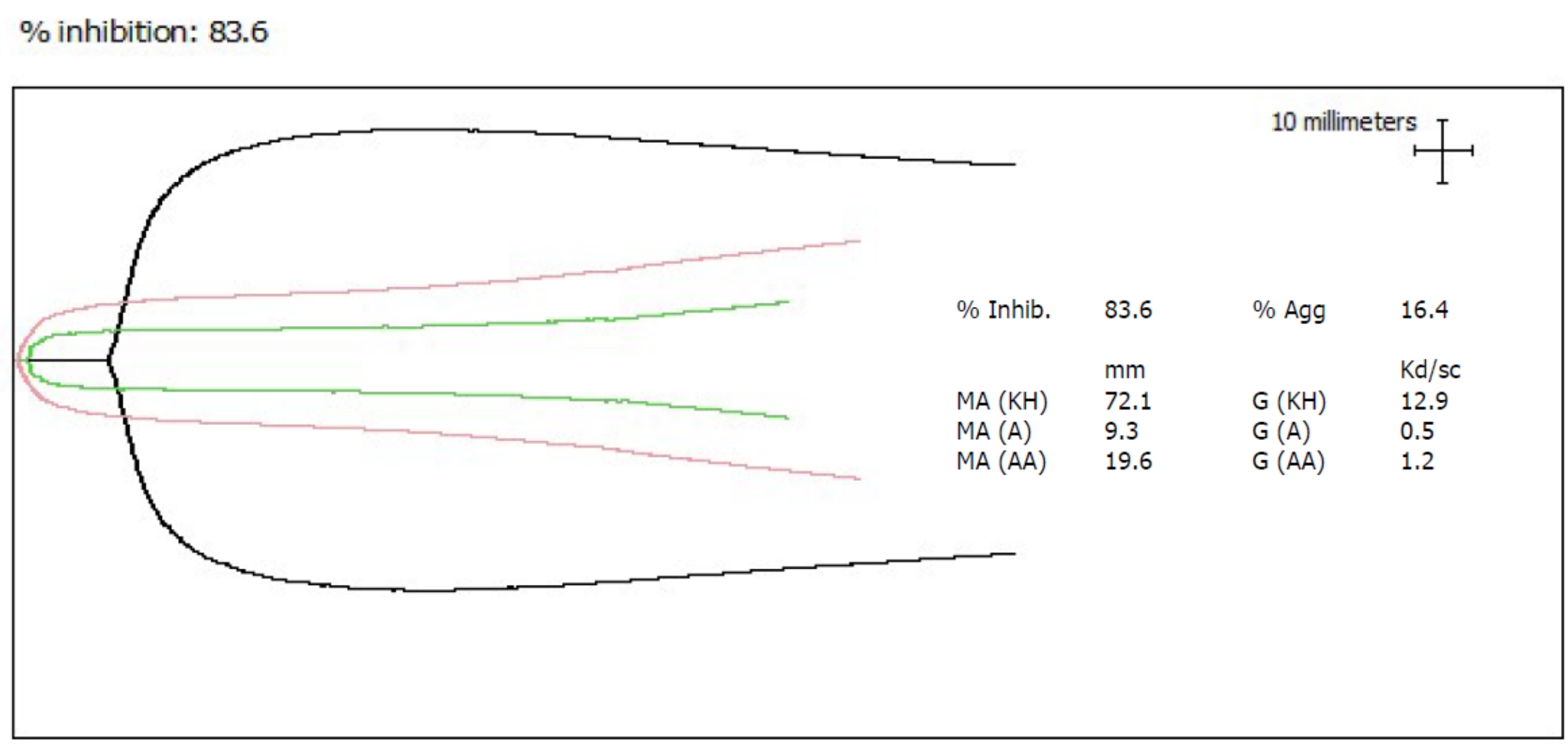
Platelet Mapping, Activator



Platelet Mapping, Activator + Arachidonic Acid



Platelet Mapping, Inhibition Calculation

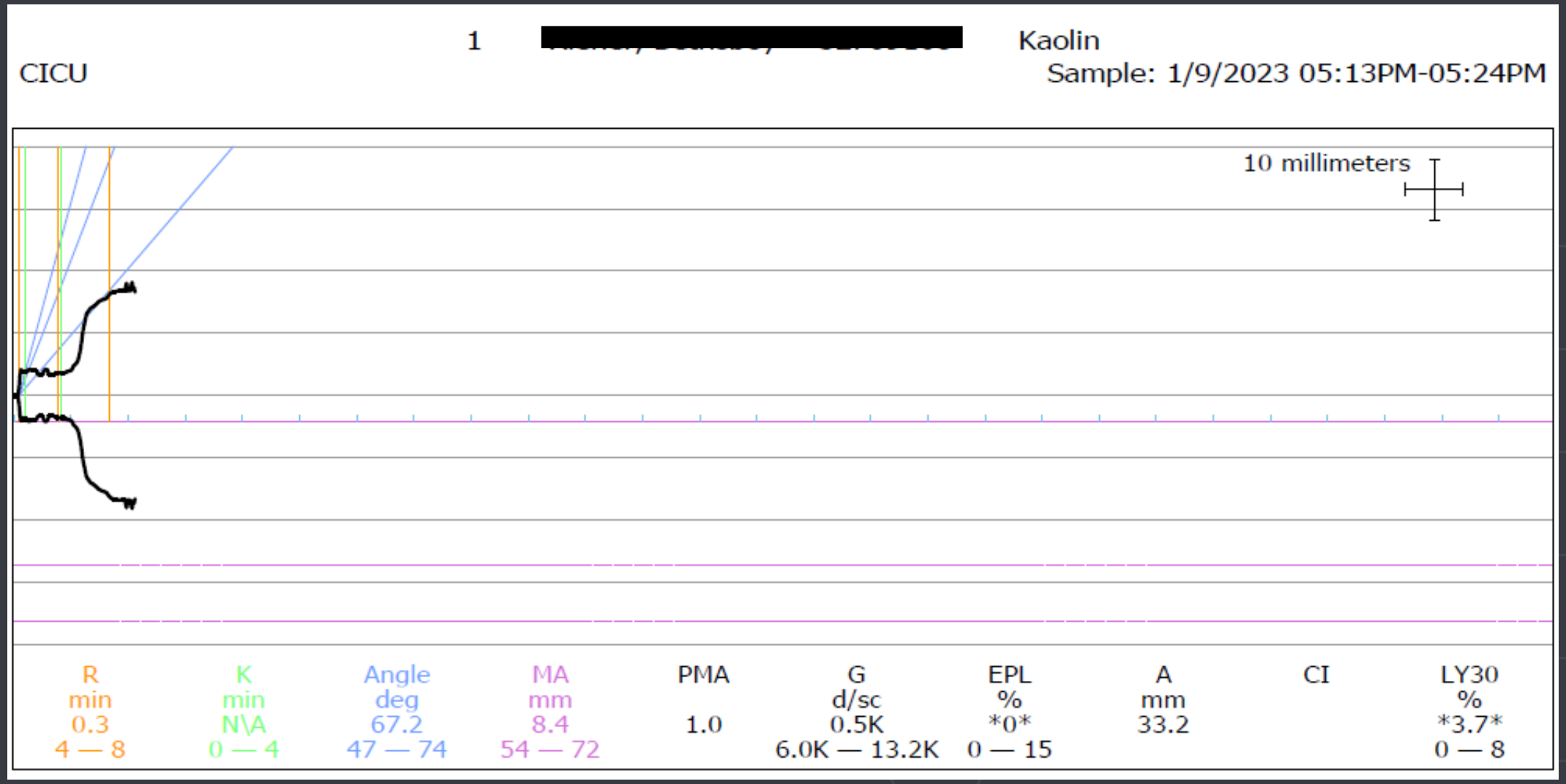


Objectives

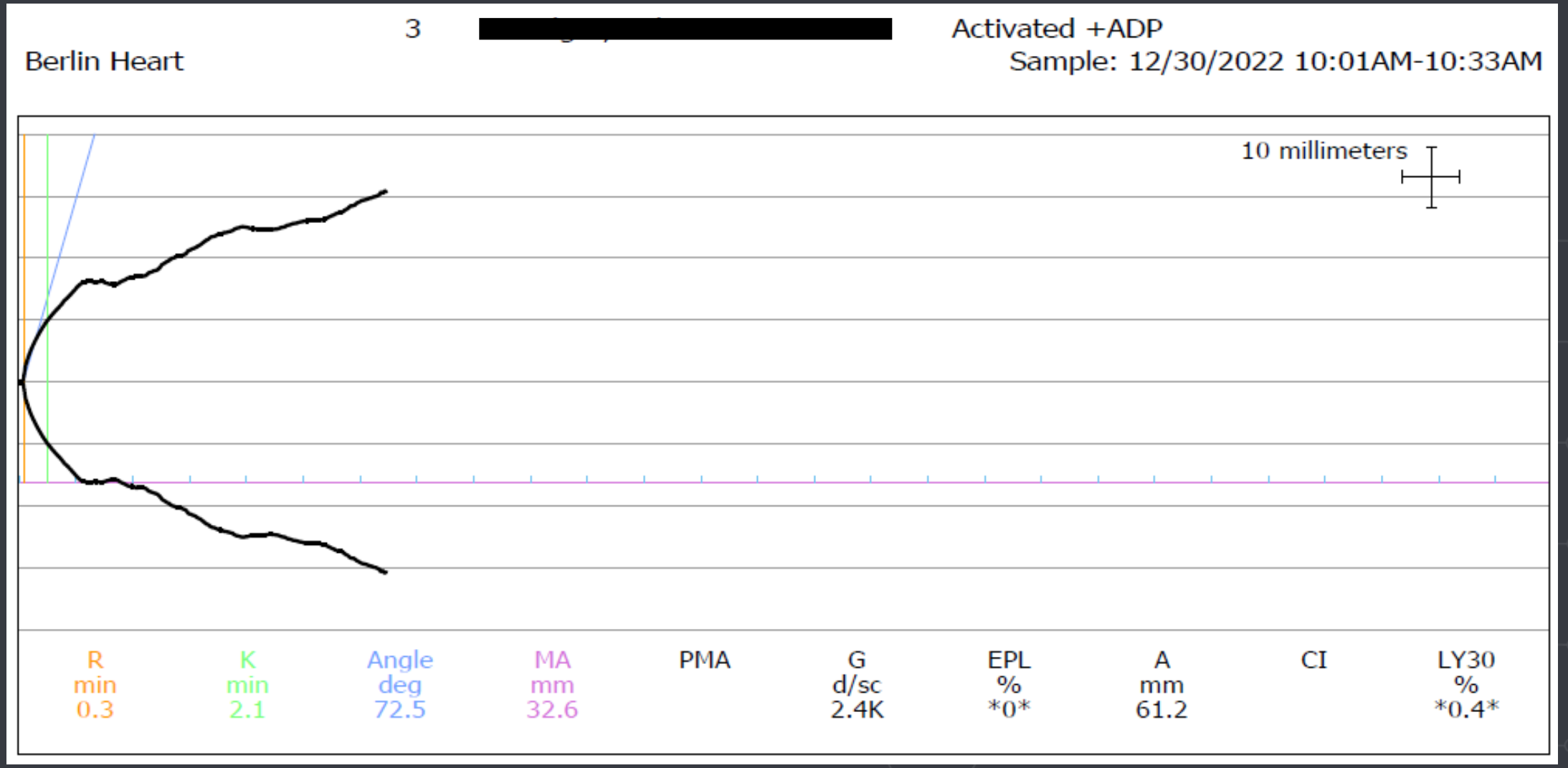
- Understand the causes of intraoperative cardiac surgical bleeding, especially in the pediatric population.
- Learn how TEG allows our surgical team to rapidly target bleeding etiology and plan effective blood component therapy.
- Explore how TEG platelet mapping and heparin effect analysis help guide long term anticoagulation for pediatric patients on ventricular assist devices.
- Discuss tips for creating a successful satellite TEG laboratory in the OR and learn to avoid the pitfalls which could hinder implementation.

Purell
Sani-Cloth

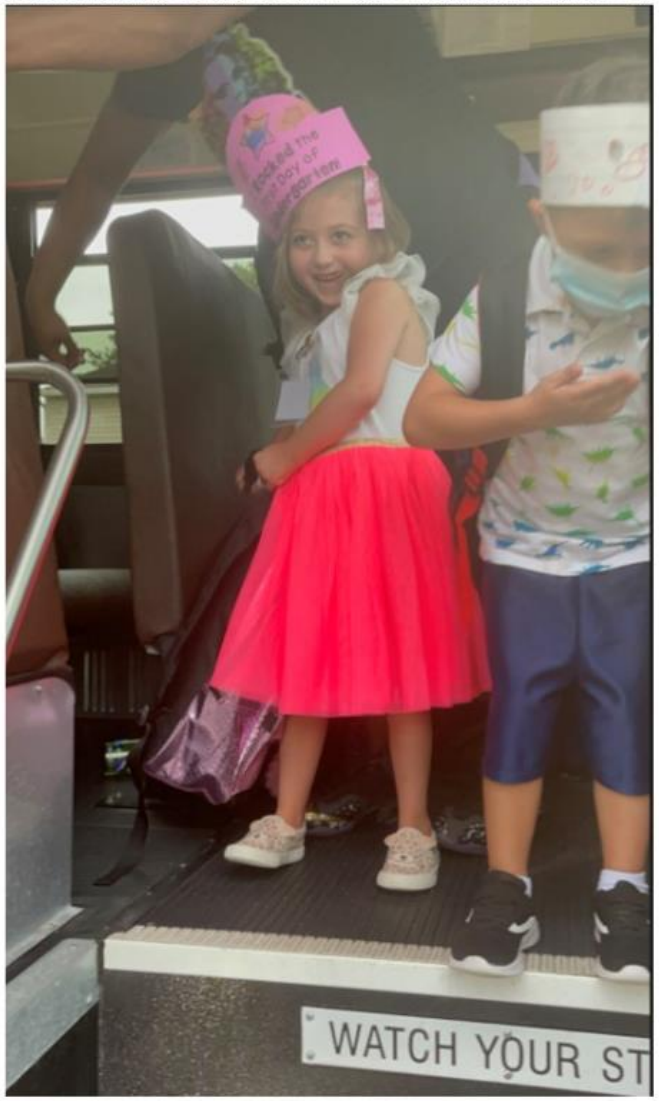
Bloopers, Kaolin Edition



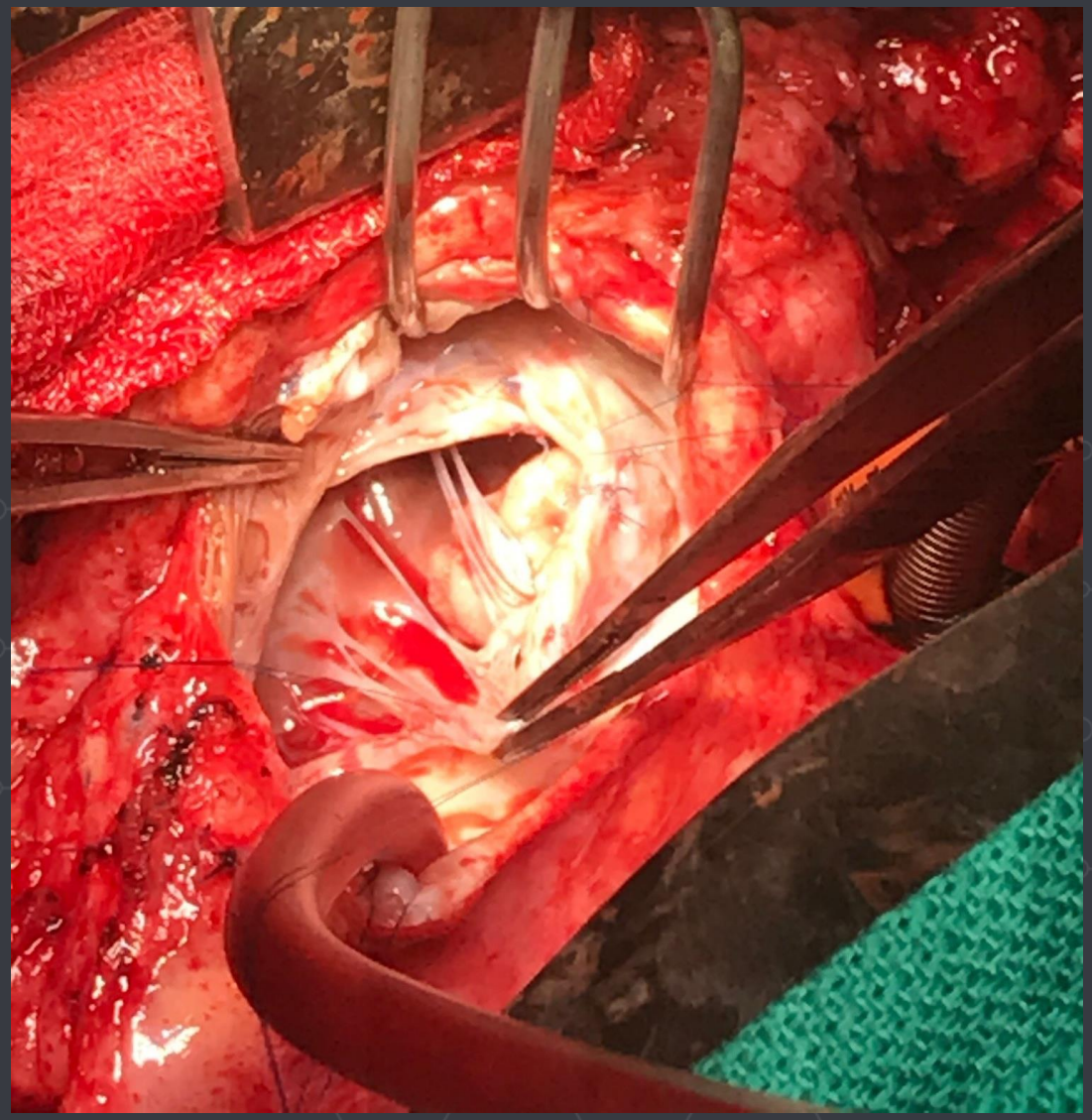
Bloopers, Platelet Map Edition



REBEKAHS FIRST DAY OF KINDERGARTEN



Sent by her Aunt in gratitude for the care she received in the Cardiac Center



NEMOURS CHILDREN'S HEALTH

Children's MINNESOTA | The Kid Experts™

POINT OF CARE MIDDLEWARE

Make Your Middleware Work For You

Danyel Olson, MT (ASCP), CPP
Point of Care Coordinator, Technical Consultant
Children's MN

Financial Disclosures

- Employed by Children's Healthcare (Children's Minnesota)
- No other financial disclosures

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Objectives

- After participating in this session, attendees should be able to define their current operator management process.
- After participating in this session, attendees should be able to describe how an interfaced POC middleware can simplify the training and competency process.
- After participating in this session, attendees should be able identify how an interfaced operator management system can save time and reduce errors.

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Children's MINNESOTA

The Kid Experts™

POC at Children's MN

- 2 hospitals, 5 specialty clinics, 1 off-site NICU, 1 ambulatory surgery and imaging center
- 100+ POC devices
- 3 waived device types, 2 waived manual tests
- 1 PPM test
- 3 moderately complex device types
- Approximately 2000 operators

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What's interfaced?

- Everything! Direct or through manual result entry system
- 45 testing locations on multiple campuses
- 141 devices
- eLearning interface from our LMS/HRIS

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Operator Management Background

- Three systems had information needed to manage operators
  - learning management system (LMS)
  - human resource information system (HRIS), provides employment status updates
  - Point of care middleware which houses the information needed to recertify operators and send operator lists to POCT devices

- Daily report from the LMS/HRIS
  - staff who completed POC online learning day prior
  - new hires, name changes, departmental moves and terminations
  - all this info was manually entered into POC middleware

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Competency Background

- Annual process after competency fair
  - Manually match up elearn completion report to competency fair completion report
  - Manually update each operator in POC middleware
  - Manual updates of all operators for each of their competencies estimated to take **39 eight hour days of time**

Device	Number of operators	Minutes to update
ACT	83	415
AVOX	20	100
DCA	54	270
Hemocue	324	1620
i-STAT	356	1780
Ketostix	225	1125
Rapid Trichomonas	27	135
Nova StatStrip	1800	9000
Rapid Streptococcus	277	1385
Urine Pregnancy	540	2700
Uristix	32	160
Wetprep	5	25
Totals	3743	18715

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Problems

- ERRORS!
  - Erroneous updates creating inaccurate information, rework and lost time
  - Inadvertently locking out operators on devices resulting in slowed patient care
  - Unwieldy processes for confirming name changes, departures and new employee assessments
  - Extreme amounts of paperwork making inspection procedures time consuming and inefficient

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Solutions

- 2015 Elearn interface development in conjunction with POC middleware provider
- One home to store training and competencies completed, operator testing performed, and employee demographics.

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Interface Process

Fields — Personalize | Find | View All | First 1-16 of 16 Last

Col	Record.Fieldname	Format	Ord	XLAT	Agg	Heading Text	Add Criteria	Edit	Delete
1	N.C_BADGE_NUM - Bar Code #	Char15				Operator ID		Edit	
2	D.LM_HR_EMPLID - EmplID	Char11				External ID		Edit	
3	E.LAST_NAME - Last Name	Char30				Operator Last Name		Edit	
4	E.FIRST_NAME - First Name	Char30				Operator First Name		Edit	
5	''	Char30				Operator Middle Initial		Edit	
6	M.LM_EMAIL_ADDR - Email Address	Char70				Operator Email		Edit	
7	''	Char100				Active Directory Account		Edit	
8	I.LM_JOBCD_DESCR - Job Code Description	Char50				Operator Title		Edit	
9	'12'	Char2				Operator Hire Month		Edit	
10	''	Char2				Operator Birth Month		Edit	
11	CASE WHEN K.LM_HR_DEPTID LIKE '21%' THEN 'STP' ELSE 'MIN' END	Char3				Facility		Edit	
12	K.LM_HR_DEPTID - Department ID	Char10				Department		Edit	
13	TO_CHAR ((TO_DATE(A.LM_COMPL_DT,'YYYY-MM-DD')),'MMDDYYYY')	Char10				Activity Completion		Edit	
14	CASE WHEN A.LM_STTS = 'COMP' THEN 'P' ELSE 'F' END	Char1				Activity Status		Edit	
15	G.LM_OBJV_SDESC - Short Description	Char10				Activity ID		Edit	
16	CASE WHEN V.LM_ACTIVE = 'N' THEN TO_CHAR ((TO_DATE(V.EFFDT,'YYYY-MM-DD')),'MMDDYYYY') ELSE '' END	Char8				Inactivate Date		Edit	

FIELD NEEDED
Operator ID
External ID
Operator Last Name
Operator First Name
Operator Middle Initial
Operator Email
Active Directory Account
Operator Title
Operator Hire Month
Operator Birth Month
Facility

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Operator Management

- Daily at 10 AM
- Automatically adds new operators
- Automatically inactivates existing operators
- Automatically updates operator demographics - name and facility/location changes
- Ready and waiting for activation
- Includes employees and travelers
- ZERO hands on time!

Configuration Detail - Operator - 164926

Definition | Certification History | Certification Requirements | Testing Privileges | Documents | Notes

Code	164926
Audit Initials	
First Name	**test**
Middle Initial	
Last Name	**test**
Facility / Location	MIN/LSU
Email Address	**test@childrensmn.org**
Active Directory Account	
QML Application Login	
QML Password	
Change QML Password Next Login	No
QML Security	None
QML Login Locked	No
User Assigned Locations	All Facilities/Locations
Host Operator Code	
Title	Staff RN (BS Degree) Mpls
License	
Birth Month	
Hire Month	December
Hire Year	
Hire Date	
Parameter Edit	None
Status	Active
Password Last Change Date	
Last Updated	5/21/2022 10:00:03 AM
Last Updated By	ELearning

Operator eLearning	System	External ID
	PeopleSoft	164926

Operator/Device Parameters	Device Type	Device Code	Password	Authority Level
Device Type	Certification Due			

5/10/2022 10:00:04 AM	ELearning	No		Edit Title from Clinical Support Associate to Staff RN (Assoc Degree) Mpls.
5/10/2022 10:00:04 AM	ELearning	No		Edit Last Updated By from 26541 to ELearning.
5/10/2022 10:00:04 AM	ELearning	No		Edit Email Address from [redacted]@childrensmn.org.
5/10/2022 10:00:04 AM	ELearning	No		Edit Facility / Location from STP/EDS to MIN/EDM.
5/10/2022 10:00:04 AM	ELearning	No		Edit Status from Inactive to Active.

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Training and Activation - waived

2022 POCT New Employee - NOVA Stat Strip Glucometer Training

You can view further details about the Class by selecting the various links. You car
button or add the class to to your Learning Plan by selecting the Add to Plan buttor

Class Code	2022-23-1	Clas
Type	eLearning (Self-Paced)	
Price Per Seat	--	Drop
Enrollment Status	In-Progress	Confirmation
Start Date	12/22/2021	E
Last Enrollment Date	--	Last Dr

Overview | Objectives Met | Schedule | Prerequisites | Not

Description POCT New Employee - NOVA Stat Strip Glucometer Training

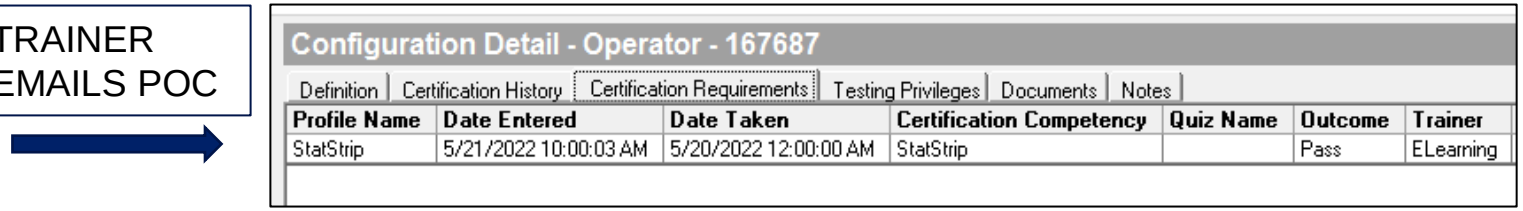
Class Syllabus

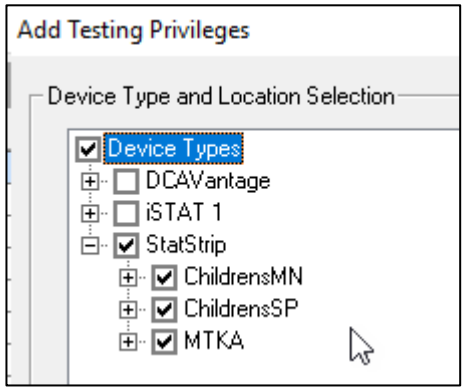
To receive credit for this class you must complete all required tasks.

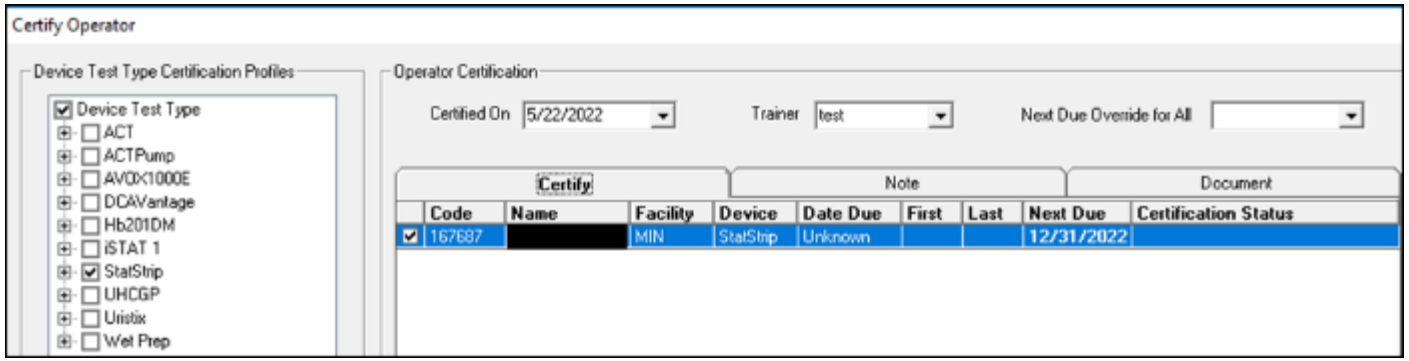
1 **2022 POCT New Employee - NOVA Stat Strip Glucometer Training**
Required Test
(Duration : 25 Mins)

2 **Demonstrate NOVA Stat Strip Competency**
Required Assignment

TRAINER EMAILS POC







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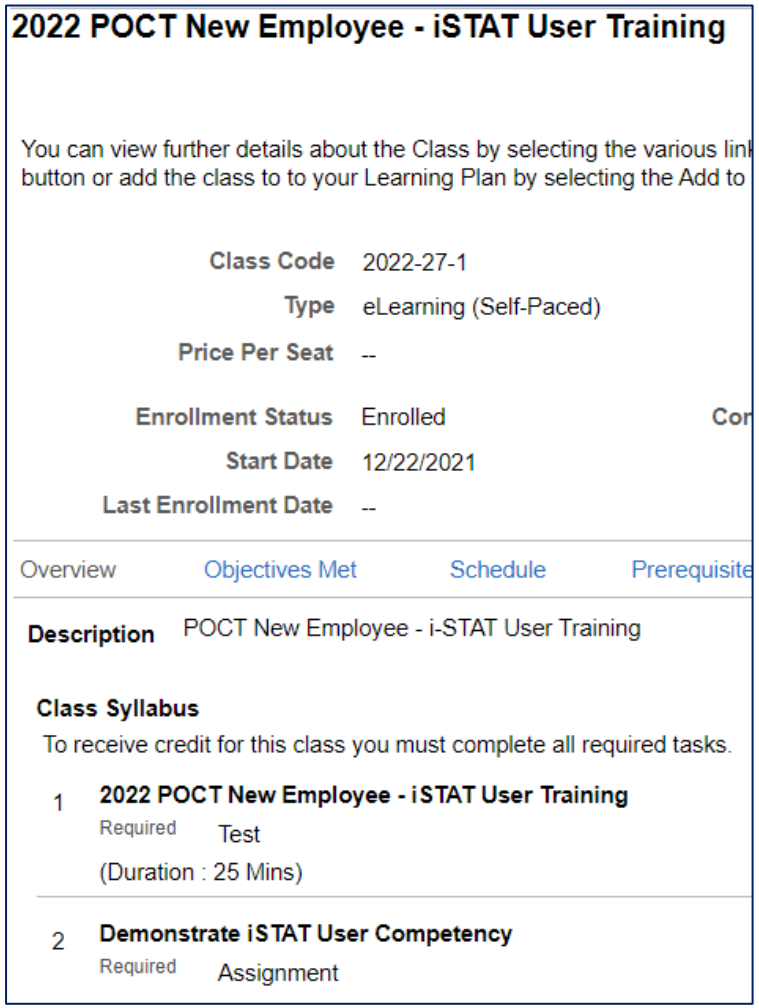
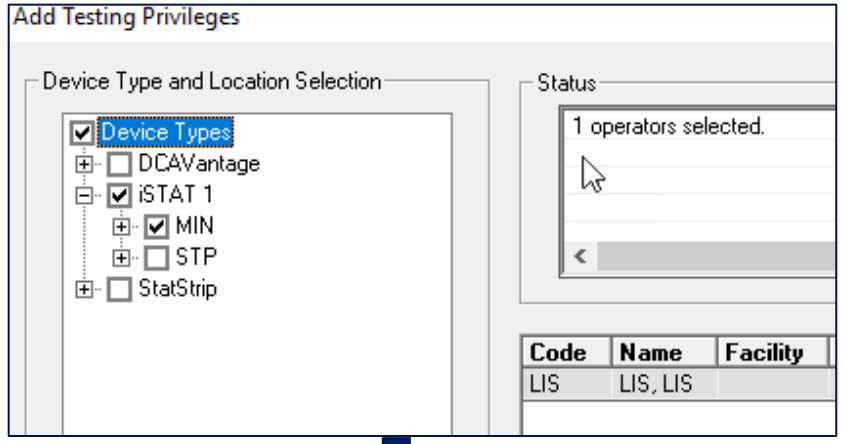
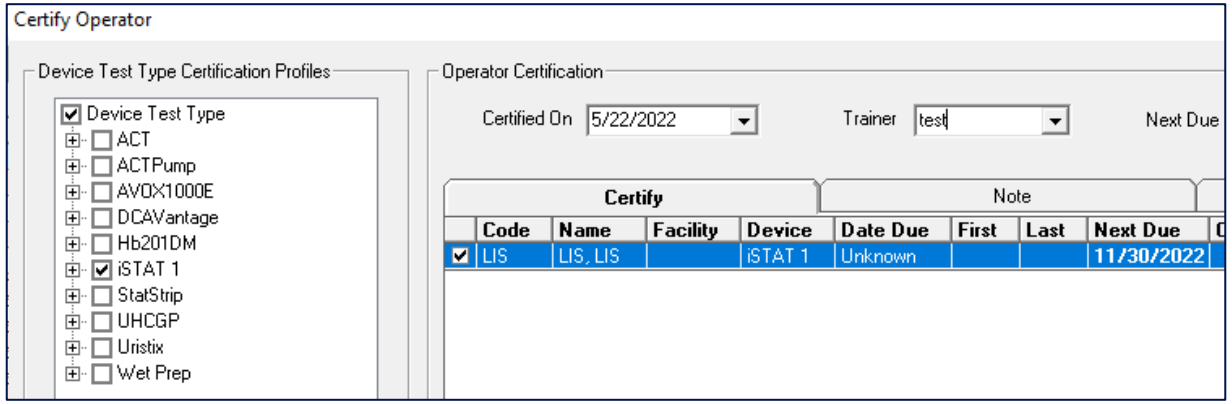
Training and Activation – Moderate



TRAINER EMAILS POC

POC CHECKS DIPLOMA UPLOAD





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Competency Management

- "Normal" year – 6 Elements
  - ❖ Elearn course auto assigned based on job code – includes link to procedure review, critical thinking/problem solving questions
  - ❖ Direct Observation/blind sample/problem solving – at annual competency fair station
  - ❖ Monitoring of test results, QC, maintenance, etc performed on a continual basis – issues addressed and documented in middleware as necessary
- Elearn pass and Comp Fair PASS feed into middleware via elearn interface

ACT	12/12/2017 12:00:00 AM	9/27/2017 12:00:00 AM	COMPPOCT		Pass	ELearning
ACTPump	12/12/2017 12:00:00 AM	9/27/2017 12:00:00 AM	COMPPOCT		Pass	ELearning
Uristix	12/12/2017 12:00:00 AM	9/27/2017 12:00:00 AM	COMPPOCT		Pass	ELearning
UHCGP	12/12/2017 12:00:00 AM	9/27/2017 12:00:00 AM	COMPPOCT		Pass	ELearning
StatStrip	12/12/2017 12:00:00 AM	9/27/2017 12:00:00 AM	COMPPOCT		Pass	ELearning
iSTAT 1	12/12/2017 12:00:00 AM	9/27/2017 12:00:00 AM	COMPPOCT		Pass	ELearning
Hb201DM	12/12/2017 12:00:00 AM	9/27/2017 12:00:00 AM	COMPPOCT		Pass	ELearning
DCAVantage	12/12/2017 12:00:00 AM	9/27/2017 12:00:00 AM	COMPPOCT		Pass	ELearning
AVOX1000E	12/12/2017 12:00:00 AM	9/27/2017 12:00:00 AM	COMPPOCT		Pass	ELearning
StatStrip	10/20/2017 12:00:00 AM	10/19/2017 12:00:00 AM	StatStrip		Pass	ELearning

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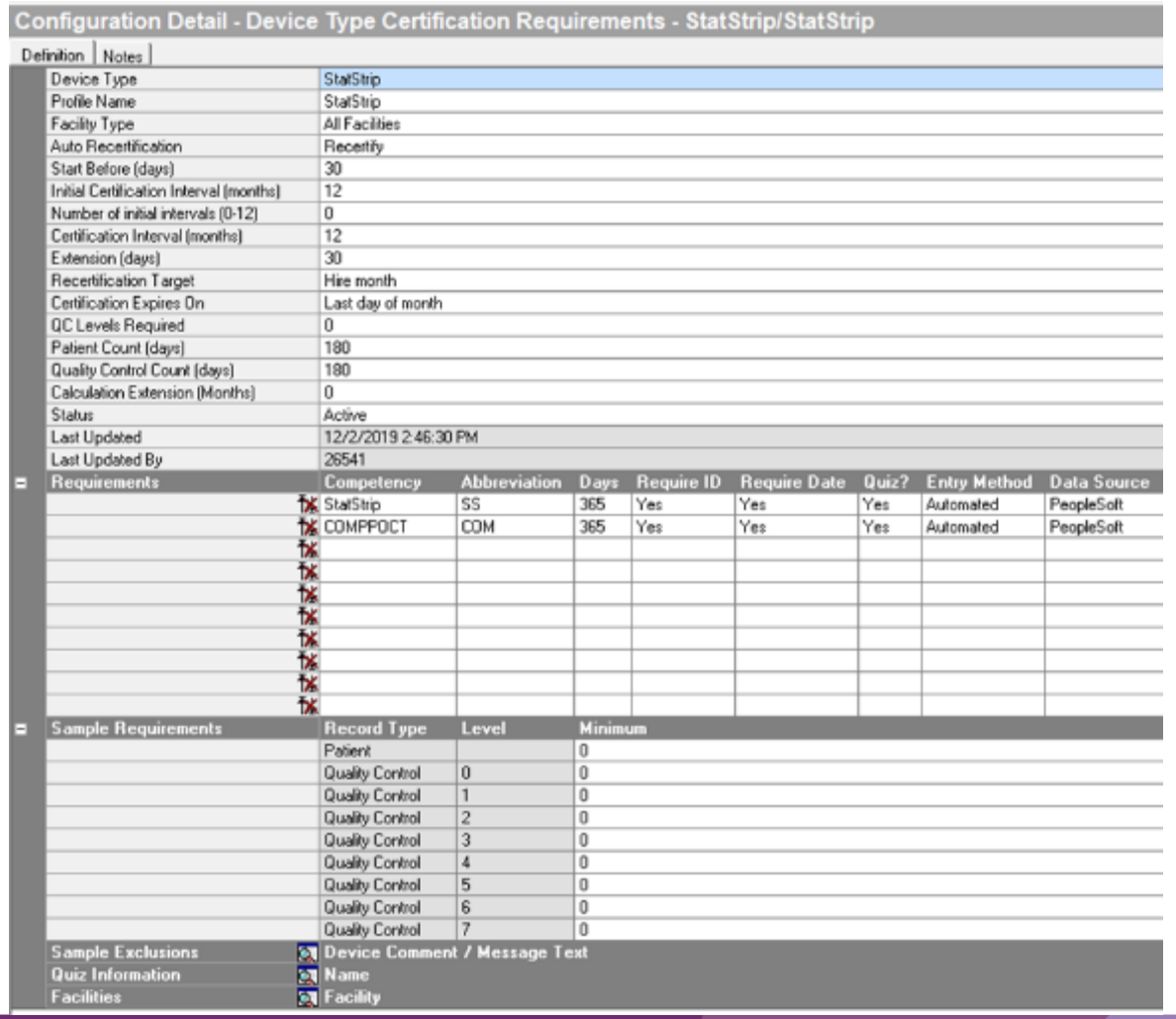
Competency Management

- Parameters can be set for each device type
  - Elearn courses
  - Patient tests
  - QC tests
- Define # of days to begin searching for requirements - Ex. 30 days prior to expiration
- Add patient or QC tests required
- Can exclude testing errors from the count
- Set number of months for new certification date



Configuration Detail - Device Type Certification Requirements - StatStrip/StatStrip

Definition | Notes

Device Type	StatStrip
Profile Name	StatStrip
Facility Type	All Facilities
Auto Recertification	Recertify
Start Before (days)	30
Initial Certification Interval (months)	12
Number of initial intervals (0-12)	0
Certification Interval (months)	12
Extension (days)	30
Recertification Target	Hire month
Certification Expires On	Last day of month
QC Levels Required	0
Patient Count (days)	180
Quality Control Count (days)	180
Calculation Extension (Months)	0
Status	Active
Last Updated	12/2/2019 2:46:30 PM
Last Updated By	26541

Requirements	Competency	Abbreviation	Days	Require ID	Require Date	Quiz?	Entry Method	Data Source
	StatStrip	SS	365	Yes	Yes	Yes	Automated	PeopleSoft
	COMPPOCT	COM	365	Yes	Yes	Yes	Automated	PeopleSoft

Sample Requirements	Record Type	Level	Minimum
	Patient		0
	Quality Control	0	0
	Quality Control	1	0
	Quality Control	2	0
	Quality Control	3	0
	Quality Control	4	0
	Quality Control	5	0
	Quality Control	6	0
	Quality Control	7	0

Sample Exclusions	Device Comment / Message Text
Quiz Information	Name
Facilities	Facility

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Competency Management

Configuration Detail - Device Type Certification Requirements - iSTAT 1/iSTAT 1

Definition | Notes

Device Type	iSTAT 1
Profile Name	iSTAT 1
Facility Type	All Facilities
Auto Recertification	Recently
Start Before (days)	30
Initial Certification Interval (months)	6
Number of initial intervals (0-12)	2
Certification Interval (months)	12
Extension (days)	30
Recertification Target	Hire month
Certification Expires On	Last day of month
QC Levels Required	0
Patient Count (days)	180
Quality Control Count (days)	180
Calculation Extension (Months)	0
Status	Active
Last Updated	12/2/2019 2:46:10 PM
Last Updated By	26541

Requirements	Competency	Abbreviation	Days	Require ID	Require Date	Quiz?	Entry Method	Data Source
	iSTAT 1	IST	365	Yes	Yes	Yes	Automated	PeopleSoft
	COMPPOCT	COM	365	Yes	Yes	Yes	Automated	PeopleSoft

Sample Requirements	Record Type	Level	Minimum
	Patient		0
	Quality Control	0	0
	Quality Control	1	0
	Quality Control	2	0
	Quality Control	3	0
	Quality Control	4	0
	Quality Control	5	0
	Quality Control	6	0
	Quality Control	7	0

Sample Exclusions	Device Comment / Message Text
Quiz Information	Name
Facilities	Facility

- Future – Facility driven certifications with different requirements, dates, etc
- Operator meets all parameters? **Automatically updated!**
- **Over 2800 annual re-certifications happen behind the scenes**
  - ❖ **Remember the time savings??**

<u>39 eight hour days</u>

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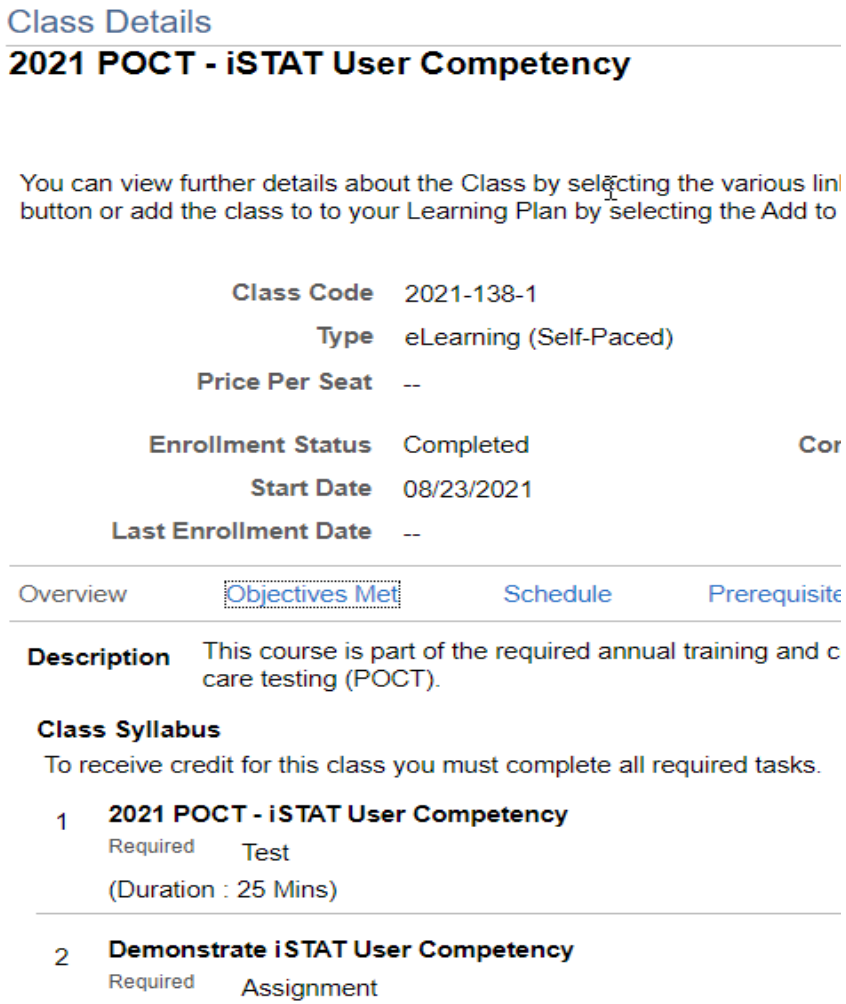
Competency Management - COVID

- No in person competency fair 2020 and 2021
- Adjusted middleware certification requirement to meet new plan
- No observation for waived testing
- Moderate – added observation within elearn and removed Comp Fair requirement in middleware



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Inspections

Configuration Detail - Operator - 134713

Definition | Certification History | Certification Requirements | Testing Privileges | Documents | Notes

Profile Name	Date Entered	Date Taken	Certification Competency	Quiz Name	Outcome	Trainer
StatStrip	6/21/2016 12:00:00 AM	6/20/2016 12:00:00 AM	StatStrip		Pass	ELearning
ACT	9/30/2016 12:00:00 AM	9/29/2016 12:00:00 AM	COMPPOCT		Pass	ELearning
ACTPump	9/30/2016 12:00:00 AM	9/29/2016 12:00:00 AM	COMPPOCT		Pass	ELearning
Uristix	9/30/2016 12:00:00 AM	9/29/2016 12:00:00 AM	COMPPOCT		Pass	ELearning
UHCGP	9/30/2016 12:00:00 AM	9/29/2016 12:00:00 AM	COMPPOCT		Pass	ELearning
StatStrip	9/30/2016 12:00:00 AM	9/29/2016 12:00:00 AM	COMPPOCT		Pass	ELearning
iSTAT 1	9/30/2016 12:00:00 AM	9/29/2016 12:00:00 AM	COMPPOCT		Pass	ELearning
Hb201DM	9/30/2016 12:00:00 AM	9/29/2016 12:00:00 AM	COMPPOCT		Pass	ELearning
DCAVantage	9/30/2016 12:00:00 AM	9/29/2016 12:00:00 AM	COMPPOCT		Pass	ELearning
AVOX1000E	9/30/2016 12:00:00 AM	9/29/2016 12:00:00 AM	COMPPOCT		Pass	ELearning

ACT	12/12/2017 12:00:00 AM	9/27/2017 12:00:00 AM	COMPPOCT		Pass	ELearning
ACTPump	12/12/2017 12:00:00 AM	9/27/2017 12:00:00 AM	COMPPOCT		Pass	ELearning
Uristix	12/12/2017 12:00:00 AM	9/27/2017 12:00:00 AM	COMPPOCT		Pass	ELearning
UHCGP	12/12/2017 12:00:00 AM	9/27/2017 12:00:00 AM	COMPPOCT		Pass	ELearning
StatStrip	12/12/2017 12:00:00 AM	9/27/2017 12:00:00 AM	COMPPOCT		Pass	ELearning
iSTAT 1	12/12/2017 12:00:00 AM	9/27/2017 12:00:00 AM	COMPPOCT		Pass	ELearning
Hb201DM	12/12/2017 12:00:00 AM	9/27/2017 12:00:00 AM	COMPPOCT		Pass	ELearning
DCAVantage	12/12/2017 12:00:00 AM	9/27/2017 12:00:00 AM	COMPPOCT		Pass	ELearning
AVOX1000E	12/12/2017 12:00:00 AM	9/27/2017 12:00:00 AM	COMPPOCT		Pass	ELearning
StatStrip	10/20/2017 12:00:00 AM	10/19/2017 12:00:00 AM	StatStrip		Pass	ELearning

StatStrip	5/20/2018 12:00:00 AM	5/19/2018 12:00:00 AM	StatStrip		Pass	ELearning
ACT	10/9/2018 12:00:00 AM	10/8/2018 12:00:00 AM	COMPPOCT		Pass	ELearning
ACTPump	10/9/2018 12:00:00 AM	10/8/2018 12:00:00 AM	COMPPOCT		Pass	ELearning
Uristix	10/9/2018 12:00:00 AM	10/8/2018 12:00:00 AM	COMPPOCT		Pass	ELearning
UHCGP	10/9/2018 12:00:00 AM	10/8/2018 12:00:00 AM	COMPPOCT		Pass	ELearning
StatStrip	10/9/2018 12:00:00 AM	10/8/2018 12:00:00 AM	COMPPOCT		Pass	ELearning
iSTAT 1	10/9/2018 12:00:00 AM	10/8/2018 12:00:00 AM	COMPPOCT		Pass	ELearning
Hb201DM	10/9/2018 12:00:00 AM	10/8/2018 12:00:00 AM	COMPPOCT		Pass	ELearning
DCAVantage	10/9/2018 12:00:00 AM	10/8/2018 12:00:00 AM	COMPPOCT		Pass	ELearning
AVOX1000E	10/9/2018 12:00:00 AM	10/8/2018 12:00:00 AM	COMPPOCT		Pass	ELearning

StatStrip	8/12/2019 12:00:00 AM	8/11/2019 12:00:00 AM	StatStrip		Pass	ELearning
AVOX1000E	10/8/2019 10:00:12 AM	10/7/2019 12:00:00 AM	COMPPOCT		Pass	ELearning
UHCGP	10/8/2019 10:00:12 AM	10/7/2019 12:00:00 AM	COMPPOCT		Pass	ELearning
DCAVantage	10/8/2019 10:00:12 AM	10/7/2019 12:00:00 AM	COMPPOCT		Pass	ELearning
Hb201DM	10/8/2019 10:00:12 AM	10/7/2019 12:00:00 AM	COMPPOCT		Pass	ELearning
iSTAT 1	10/8/2019 10:00:12 AM	10/7/2019 12:00:00 AM	COMPPOCT		Pass	ELearning
ACT	10/8/2019 10:00:12 AM	10/7/2019 12:00:00 AM	COMPPOCT		Pass	ELearning
ACTPump	10/8/2019 10:00:12 AM	10/7/2019 12:00:00 AM	COMPPOCT		Pass	ELearning
Uristix	10/8/2019 10:00:12 AM	10/7/2019 12:00:00 AM	COMPPOCT		Pass	ELearning
StatStrip	10/8/2019 10:00:12 AM	10/7/2019 12:00:00 AM	COMPPOCT		Pass	ELearning

StatStrip	11/5/2020 10:00:01 AM	11/4/2020 12:00:00 AM	StatStrip		Pass	ELearning
StatStrip	11/26/2021 10:00:03 AM	11/25/2021 12:00:00 AM	StatStrip		Pass	ELearning

- Explain our process
- Show elearn content
- Show comp fair/observation process
- Show history in middleware

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