The Society of Thoracic Surgeons
Adult Cardiac Surgery Database
Data Collection Form
Version 2.52.1

A. Administrative

Participant ID: |___|___|___|___|___|___| Record ID _____

Cost Link Field: _____ STS Trial Link Number: |___|___|___|___|___|___| Patient ID _____

B. Demographics

Last Name: _____ First Name: _____ Patient M.I.: ____ Name Fields Not Harvested

Date of Birth (mm/dd/yyyy): __ __/__ __/__ __ __ __ Patient Age: _____ System Calculation

Gender: Male Female

Social Security (or National Patient ID) Number: _____ Not Harvested Medical Record Number: _____ Not Harvested

Patient ZIP or Postal Code: _____ Race: Caucasian Black Hispanic Asian Native American Other

Referring Cardiologist's Name: _____ Not Harvested Referring Physician's Name: _____ Not Harvested

C. Hospitalization

Hospital Name: _____ Hospital ZIP Code |_____| Hospital State |___|___|

Payor: _____ Not Harvested

Date of Admission: __ __/__ __/__ __ __ __ Date of Surgery: __ __/__ __/__ __ __ __ Date of Discharge: __ __/__ __/__ __ __ __

ICU Visit: Yes No If Yes, → Initial ICU Hours:_____

Readmn to ICU: Yes No If Yes, → Additional ICU Hours _____

Total Hours in ICU:_____

D. Risk Factors

Weight (kg): _____ Height (cm): _____

Smoker: Yes No If Yes, → Current Smoker: Yes No

Family History of Coronary Artery Disease: Yes No

Diabetes: Yes No If Yes, select one: → Diabetes Control: None Diet Oral Insulin

Dyslipidemia: Yes No

Last Creatinine Level Preop: _____

Renal Failure: Yes No If Yes, → Dialysis: Yes No

Hypertension: Yes No

Cerebrovascular Accident: Yes No If Yes, → When: Recent <= 2 weeks Remote > 2 weeks

Infectious Endocarditis: Yes No If Yes, → Infectious Endocarditis Type: Treated Active

Chronic Lung Disease: No Mild Moderate Severe

Immunosuppressive Therapy: Yes No

Peripheral Vascular Disease: Yes No

Cerebrovascular Disease: Yes No If Yes, → CVD Type: Coma CVA RIND TIA Non Invasive > 75% Prior Carotid Surgery

E. Previous CV Interventions

Incidence: First CV Surgery First Re-op CV Surgery Second Re-op CV Surgery Third Re-op CV Surgery Fourth or More Re-op Surgery

Previous CV Interventions: Yes No If Yes, complete the rest of this section ↓

Previous Coronary Artery Bypass: Yes No

Previous Valve: Yes No

Previous Other Cardiac – Intrapericardial or Great Vessel: Yes No

Previous Other Cardiac – AICD: Yes No

Previous Other Cardiac – Pacemaker: Yes No If Yes, → Previous Other Cardiac – Pacemaker Type: Biventricular Univentricular

Previous Other Cardiac – PCI: Yes No If Yes, → Previous Other Cardiac – PCI Interval: <= 6 Hours > 6 Hours

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F. Preoperative Cardiac Status

Myocardial Infarction: Yes No If Yes, → When: <= 6 hours > 6 hours but <24 hours 1 - 7 days 8 - 21 days > 21 days

Congestive Heart Failure: Yes No

Angina: Yes No If Yes, → Angina Type: Stable Unstable

Cardiogenic Shock: Yes No If Yes, → Cardiogenic Shock Type: Refractory Shock Hemodynamic Instability

Resuscitation: Yes No

Arrhythmia: Yes No If Yes, → Arrhythmia Type: Sust VT/VF Heart Block AFib/Flutter None

Classification - NYHA: I II III IV

G.. Preoperative Medications

Beta Blockers: Yes No

ACE Inhibitors: Yes No

Nitrates I.V.: Yes No

Anticoagulants: Yes No If Yes, → Anticoagulants Medication Name: Heparin (Unfractionated) Heparin (Low Molecular) Thrombin Inhibitors

Coumadin: Yes No

Inotropes: Yes No

Steroids: Yes No

Aspirin: Yes No

Lipid-Lowering: Yes No If Yes, → Lipid Lowering Medication Name: Statin Non statin

ADP Inhibitors: Yes No

Glycoprotein IIbIIIa Inhibitor: Yes No If Yes, → Glycoprotein IIbIIIa Inhibitor Medication Name: Abciximab (ReoPro)
Eptifibatied (Integrilin)
Tirofiban (Aggrastat)

H. Hemodynamics and Cath

Number of Diseased Coronary Vessels: None One Two Three

Left Main Disease >= 50%: Yes No

Ejection Fraction Done? Yes No If Yes, → Ejection Fraction: _____
Method: LV gram Radionucleotide Estimate ECHO

Pulmonary Artery Mean Pressure Done? Yes No If Yes, → Pulmonary Artery Mean Pressure: _____

Aortic Stenosis: Yes No If Yes, → Gradient: _____

Mitral Stenosis: Yes No

Tricuspid Stenosis: Yes No

Pulmonic Stenosis: Yes No

Aortic Insufficiency: 0=None 1=Trivial 2=Mild 3= Moderate 4= Severe

Mitral Insufficiency: 0=None 1=Trivial 2=Mild 3= Moderate 4= Severe

Tricuspid Insufficiency: 0=None 1=Trivial 2=Mild 3= Moderate 4= Severe

Pulmonic Insufficiency: 0=None 1=Trivial 2=Mild 3= Moderate 4= Severe

I. Operative

Surgeon's Name: _____ Surgeon ID: _____

Status of the procedure: ↓

Elective

Urgent → Reason: AMI IABP Worsening CP CHF Anatomy USA Rest Angina
Valve Dysfunction Aortic Dissection Angiographic Accident

Emergent → Reason: Shock Circ Support Shock No Circ Support Pulmonary Edema AEMI
Ongoing Ischemia Valve Dysfunction Aortic Dissection Angiographic Accident

Emergent Salvage

Robotic Technology Assisted: Yes No

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Coronary Artery Bypass: Yes No → If Yes, also complete Section J

Valve Surgery : Yes No → If Yes, also complete Section K

Ventricular Assist Device: Yes No → If Yes, also complete Section L

Other Cardiac Procedure: Yes No → If Yes, also complete Section M

Other Non-Cardiac Procedure: Yes No → If Yes, also complete Section N

Skin Incision Start Time: _____ 24 hour clock Skin Incision Stop Time: _____ 24 hour clock

CPB Utilization: None Combination Full ↓

If Combination, → Combination Plan: Planned Unplanned → If Unplanned, Unplanned Combination Reason: Exposure/visualization
Bleeding
Inadequate size and/or diffuse disease of distal vessel
Hemodynamic Instability
Conduit quality and/or trauma
Other

If Combination or Full, → Perfusion Time (min): _____

Cannulation Method: → Aorta and Fem/Jug Vein
Fem Art and Fem/Jug Vein
Aorta and Atrial/Caval
Fem Art and Atrial/Caval
Other

Aortic Occlusion: → None
Aortic Crossclamp → If Aortic Crossclamp or Balloon Occlusion, → Cross Clamp Time (min): _____
Balloon Occlusion
Partial Crossclamp

Cardioplegia: Yes No

IABP: Yes No → If Yes, When Inserted: → Preoperatively Intraoperatively Postoperatively
Indication: → Hemodynamic Instab PTCA Support Unstable Angina CPB Wean Prophylactic

Intraop Blood Products: Yes No → If Yes, Red Blood Cell Units _____
Fresh Frozen Plasma Units _____
Cryoprecipitate Units _____
Platelet Units _____

J. Coronary Bypass

Number of Distal Anastomoses with Arterial Conduits: _____

Number of Distal Anastomoses with Venous Conduits: _____

Anastomotic Device Used: Yes No If Yes, → Anastomotic Device: Glue Magnets Clips Staples Other

IMAs Used as Grafts: Left IMA Right IMA Both IMAs No IMA If Left, Right, or Both ↓
IMA Harvest Technique: Direct Vision Thoracoscopy Combination Robotic Assisted
Number of IMA Distal Anastomoses: _____

Radial Artery Used: No Radial Left Radial Right Radial Both Radials If Left, Right, or Both ↓
Number of Radial Artery Distal Anastomoses: _____

Number of Gastro-Epiploic Artery Distal Anastomoses: _____

Number of Other Arterial Distal Anastomoses: _____

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K. **Valve Surgery**

Aortic:	Mitral:	Tricuspid:	Pulmonic:
No	No	No	No
Replacement	Annuloplasty Only	Annuloplasty Only	Replacement
Repair/Reconstruction	Replacement	Replacement	Reconstruction
Root Reconstruction w/ Valve Conduit	Reconstruction w/ Annuloplasty	Reconstruction w/ Annuloplasty	
Replacement + Aortic Graft Conduit	Reconstruction w/out Annuloplasty	Reconstruction w/out Annuloplasty	
Root Reconstruction w/ Valve Sparing		Valvectomy	
Resuspension Aortic Valve with replacement ascending Aorta			
Resuspension Aortic Valve without replacement ascending Aorta			
Resection Sub-Aortic Stenosis			

Annular Enlargement: Yes No

↓ Key M = Mechanical B = Bioprosthesis H = Homograft A = Autograft (Ross) R = Ring/Annuloplasty BA = Band/Annuloplasty

Aortic Prosthesis -	Implant Type:	None	M	B	H	A	R	BA	Implant: _____	Size: _____
Mitral Prosthesis -	Implant Type:	None	M	B	H	A	R	BA	Implant: _____	Size: _____
Tricuspid Prosthesis -	Implant Type:	None	M	B	H	A	R	BA	Implant: _____	Size: _____
Pulmonic Prosthesis -	Implant Type:	None	M	B	H	A	R	BA	Implant: _____	Size: _____

Valve Key

Mechanical
ATS Mechanical Prosthesis = M1
Björk-Shiley Convex-Concave Mechanical Prosthesis = M2
Björk-Shiley Monostrut Mechanical Prosthesis = M3
CarboMedics Mechanical Prosthesis = M4
CarboMedics Carbo-Seal Ascending Aortic Valved Conduit Prosthesis = M16
CarboMedics Carbo-Seal Valsalva Ascending Aortic Valved Conduit Prosthesis = M17
CarboMedics Reduced Cuff Aortic Valve = M18
CarboMedics Standard Aortic Valve = M19
CarboMedics Top-Hat Supra-annular Aortic Valve = M20
CarboMedics OptiForm Mitral Valve = M21
CarboMedics Standard Mitral Valve = M22
CarboMedics Orbis Universal Valve = M23
CarboMedics Small Adult Aortic and Mitral Valves = M24
Edwards Tekna Mechanical Prosthesis = M5
Lillehei-Kaster Mechanical Prosthesis = M6
MCRI On-X Mechanical Prosthesis = M10
Medtronic-Hall/Hall Easy-Fit Mechanical Prosthesis = M7
Medtronic ADVANTAGE Mechanical Prosthesis= M25
OmniCarbon Mechanical Prosthesis = M8
OmniScience Mechanical Prosthesis = M9
Sorin Bicarbon (Baxter Mira) Mechanical Prosthesis = M11
Sorin Monoleaflet Allcarbon Mechanical Prosthesis = M12
St. Jude Medical Mechanical Prosthesis or St. Jude Medical® Mechanical Heart Valve = M13
SJM® Masters Series Mechanical Heart Valve = M26
SJM® Masters Series Aortic Valve Graft Prosthesis = M27
St. Jude Medical® Mechanical Heart Valve Hemodynamic Plus (HP) Series = M28
SJM® Masters Series Hemodynamic Plus Valve with FlexCuff™ Sewing Ring = M29
SJM Regent™ Valve = M30
Starr-Edwards Caged-Ball Prosthesis = M14
Ultracor Mechanical Prosthesis = M15

Bioprosthetic
Baxter Prima Stentless Porcine Bioprosthesis – Subcoronary = B24
Baxter Prima Stentless Porcine Bioprosthesis – Root = B25
Biocor Porcine Bioprosthesis = B3
Biocor Stentless Porcine Bioprosthesis – Subcoronary = B26
Biocor Stentless Porcine Bioprosthesis – Root = B27
CarboMedics PhotoFix Pericardial Bioprosthesis = B5
Carpentier-Edwards Duraflex Porcine Bioprosthesis = B28
Carpentier-Edwards Prima Plus Stentless Porcine Bioprosthesis – Subcoronary = B29
Carpentier-Edwards Prima Plus Stentless Porcine Bioprosthesis – Root = B30
Carpentier-Edwards PERIMOUNT Pericardial Bioprosthesis = B6
Carpentier-Edwards Standard Porcine Bioprosthesis = B7
Carpentier-Edwards Supra-Annular Aortic Porcine Bioprosthesis = B8
Cryolife O'Brien Stentless Porcine Bioprosthesis – Subcoronary = B31
Cryolife O'Brien Stentless Porcine Bioprosthesis – Root = B32
Hancock Standard Porcine Bioprosthesis = B10
Hancock II Porcine Bioprosthesis = B11
Hancock Modified Orifice Porcine Bioprosthesis = B12
Ionescu-Shiley Pericardial Bioprosthesis = B13
Labcor Stented Porcine Bioprosthesis = B14
Labcor Stentless Porcine Bioprosthesis – Subcoronary = B33
Labcor Stentless Porcine Bioprosthesis – Root = B34
Medtronic Freestyle Stentless Porcine Bioprosthesis – Subcoronary = B35
Medtronic Freestyle Stentless Porcine Bioprosthesis – Root = B36
Medtronic Intact Porcine Bioprosthesis = B17
Medtronic Mosaic Porcine Bioprosthesis = B18
Medtronic Contegra Bovine Jugular Bioprosthesis = B37
Mitroflow Pericardial Bioprosthesis = B19
St. Jude Medical - Toronto SPV Stentless Porcine Bioprosthesis or SJM Toronto SPV® Valve = B21
St. Jude Medical-Bioimplant Porcine Bioprosthesis = B22
SJM Biocor™ Valve = B38
SJM Epic™ Valve = B39
SJM Toronto Root™ Bioprosthesis = B40
Sorin Pericarbon Stentless Pericardial Bioprosthesis = B20

Homograft
CryoLife Aortic Homograft = H6
CryoLife Pulmonary Homograft = H7
CryoLife CryoValve SG(Decellularized)Aortic Homograft = H8
CryoLife CryoValve SG Pulmonary Homograft = H9
Homograft Aortic – Subcoronary = H1
Homograft Aortic Root = H2
Homograft Mitral = H3
Homograft Pulmonic Root = H4
LifeNet CV Allografts = H10

Autograft
Pulmonary Autograft to aortic root (Ross Procedure) = A1

Ring - Annuloplasty
CarboMedics AnnuloFlo Ring = R8
CarboMedics AnnuloFlex Ring = R9
CarboMedics CardioFix Bovine Pericardium with PhotoFix Technology = R10
Carpentier-Edwards Classic Annuloplasty Ring = R1
Carpentier-Edwards Physio Annuloplasty System Ring = R2
Cosgrove-Edwards Annuloplasty System Ring = R3
Edwards MC³ Tricuspid Annuloplasty System G Future Band = R11
Genesee Sculptor Annuloplasty Ring = R12
Medtronic Sculptor Ring = R4
Medtronic-Duran AnCore Ring = R5
Sorin-Puig-Messana Ring = R6
St. Jude Medical Sequin Ring or SJM® Séguin Annuloplasty Ring = R7
SJM Tailor™ Annuloplasty Ring = R13

Band – Annuloplasty
Medtronic Colvin Galloway Future Band = Ba1
Medtronic Duran Band = Ba2
Medtronic Duran – Ancore Band = Ba3

Other = 777

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L. **VAD**

Previous VAD: Yes No
Please note that future references to "initial VAD" refer to the initial VAD for this hospitalization, not a VAD placed during a previous hospitalization.

Current Circulatory Support: For Initial VAD only

Indication for VAD: (Bridge to Transplant) (Bridge to Recovery) (Destination) (Separation from CPB) (Device Malfunction)

Intubated Pre VAD: Yes No

Hemodynamics Pre VAD: May be obtained Prior to induction in the OR, or in an ICU immediately prior to OR

PCWP: _____mm/Hg CVP: _____mm/Hg PVR: _____woods units CI: _____L/ (min x m2)

RV Function: (Normal) (Mildly Impaired) (Moderately Impaired) (Severely Impaired)

RV Function method: _____ (Pre-op ECHO) (Intra-op pre VAD TEE)

VO2 Measured: Yes No

Peak VO2:_____ml/kg/min

VAD Device Data:

Implant Type: Fill in below: (RVAD) (LVAD) (BiVAD)
Product Type: Fill in below: 1. HeartQuest VAD 2. Lion Heart 3. Novacor LVAS 4. Heartsaver VAD 5. Jarvik 2000 6. Debakey VAD 7. TandemHeart pVAD 8. AB-180 iVAD 9. CardioWest TAH 10. Thoratec IVAD 11. HeartMate VE 12. HeartMate IP LVAS 13. HeartMate SNAP-VE 14. HeartMate XVE 15. HeartMate II 16. HeartMate III 17. BVS5000i 18. AbioCor 19. Incor 20. Excor 21. Other

Explant Reason: Fill in below: 1. Cardiac Transplant 2. Recovery 3. Device Transfer 4. Device Related Infection 5. Device Malfunction

Initial Implant Data

Implant Type	Product Type	Implant Date	Explant	Explant Date	Explant Reason	Cardiac Tx	Tx Date
_____	_____	___ / __ / ___	Y N	___ / ___ / ___	_____	Y N	___ / ___ / ___

Initial VAD Cannulation/Attachment Sites:

LVAD Inflow: (LA) (LV)

RVAD Inflow: (RA) (RV)

Additional Implant(s) Data

Implant(s) Type	Product Type	Implant Date	Explant	Explant Date	Explant Reason	Cardiac Tx	Tx Date
_____	_____	___ / ___ / ___	Y N	___ / ___ / ___	_____	Y N	___ / ___ / ___
_____	_____	___ / ___ / ___	Y N	___ / ___ / ___	_____	Y N	___ / ___ / ___

Primary VAD Complications Data:

Intracranial Bleed: Yes No

Embolic Stroke: Yes No

Driveline/Cannula Infection: Yes No

Pump Pocket Infection: Yes No

VAD Endocarditis: Yes No

Device Malfunction: Yes No

Additional Complications (not specific to initial VAD as above) to be collected in section "P", Complications.

VAD Status: Discharged from hospital: (with VAD) (without VAD)

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M. **Other Cardiac Procedures**

Yes	No	Left Ventricular Aneurysm Repair	Yes	No	Ventricular Septal Defect Repair	Yes	No	Atrial Septal Defect Repair
Yes	No	Batista	Yes	No	Surgical Ventricular Restoration	Yes	No	Congenital Defect Repair
Yes	No	Transmyocard Laser Revasc	Yes	No	Cardiac Trauma	Yes	No	Cardiac Transplant

Arrhythmia Correction Surgery → None
Permanent Pacemaker
Permanent Pacemaker with Cardiac Resynchronization Therapy (CRT)
Implanted Cardioverter Defibrillator (ICD)
ICD with CRT

If "Permanent Pacemaker with CRT" or "ICD with CRT", then answer ↓

Arrhythmia Correction Surgery – Lead Placement → Epicardial Endocardial

Atrial Fibrillation Correction Surgery → None
Standard Surgical Maze Procedure
Other Surgical Ablative Procedure
Combination of Standard and Other If Other or Combo, then answer ↓

Atrial Fibrillation Surgery – Energy Source → Unipolar Radiofrequency
Bipolar Radiofrequency
Microwave
Cryothermia
Other
Combination of above

Yes No Aortic Aneurysm If Yes, → Yes No Ascending Aorta
Yes No Aortic Arch
Yes No Descending Aorta
Yes No Thoracoabdominal Aorta

Yes No Other

N. **Other Non Cardiac Procedures**

Yes No Carotid Endarterectomy Yes No Other Vascular Yes No Other Thoracic Yes No Other

O. **Post Operative**

Blood Products Used Postoperatively: Yes No → If Yes, Red Blood Cell Units _____
Fresh Frozen Plasma Units _____
Cryoprecipitate Units _____
Platelet Units _____

Extubated in OR: Yes No If No, → Initial # Hrs Ventilated Postop: _____

Re-intubated During Hosp Stay: Yes No If Yes, → Addl Hours Ventilated Postop: _____

Total Hours Ventilated Postop: _____

P. **Complications** In Hospital Complications: Yes No

Operative:

Yes No ReOp for Bleeding Tamponade
Yes No ReOp for Valvular Dysfunction
Yes No ReOp for Graft Occlusion
Yes No ReOp for Other Cardiac Problem
Yes No ReOp for Other Non Cardiac Problem
Yes No Perioperative MI

Infection:

Yes No Sternum – Deep
Yes No Thoracotomy
Yes No Leg
Yes No Septicemia

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Neurologic:

Yes No Postoperative Stroke for >72 hours

Yes No Transient Neurologic Deficit

Yes No Continuous Coma >=24Hrs

Pulmonary:

Yes No Prolonged Ventilation

Yes No Pulmonary Embolism

Yes No Pneumonia

Renal:

Yes No Renal Failure If Yes, ↓

Yes No Dialysis (Newly Required)

Vascular:

Yes No Illiac/Femoral Dissection

Yes No Acute Limb Ischemia

Other:

Yes No Heart Block

Yes No Cardiac Arrest

Yes No Anticoagulant Complication

Yes No Tamponade

Yes No Gastro-Intestinal Complication

Yes No Multi-System Failure

Yes No Atrial Fibrillation

Yes No Aortic Dissection

Yes No Other

Q. **Mortality**

Mortality: Yes No Discharge Status: Alive Dead Status at 30 days after surgery: Alive Dead Unknown

Operative Death: Yes No Only answered if Mortality = Yes

Mortality - Date __ __/__ __/__ __ __ __ (mm/dd/yyyy) Only answered if Mortality = Yes

Location of Death: OR during initial surgery Hospital Home Other Care Facility OR during reoperation Only answered if Mortality = Yes

Primary Cause of Death (select only one): Only answered if Mortality = Yes

Cardiac Neurologic Renal Vascular Infection Pulmonary Valvular Unknown Other

R. **Discharge** (Note: This section is only answered if Discharge Status is "Alive")

ADP Inhibitors: Yes No

Antiarrhythmics: Yes No If Yes, ↓

Antiarrhythmics – Discharge – Medication Name: Amiodarone Other

Aspirin: Yes No

Ace-Inhibitors: Yes No

Beta Blockers: Yes No

Lipid Lowering: Yes No If Yes, ↓

Lipid Lowering – Discharge – Medication Type: Statin Non statin

Coumadin: Yes No

Discharge Location: Home Extended Care/TCU Other Hospital Nursing Home Other

Cardiac Rehabilitation Referral: Yes No Not Applicable

Smoking Cessation Counseling: Yes No Not Applicable

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S. **Readmission** (Note: This section is only answered if Discharge Status is "Alive")

Readmit <=30 Days from Date of Procedure: Yes No ↓ If Yes, select the primary reason and procedure

Readmit Reason:

- Anticoagulation Complication – Valvular
- Anticoagulation Complication - Pharmacological
- Arrhythmias/Heart Block
- Congestive Heart Failure
- Myocardial Infarction and/or Recurrent Angina
- Pericardial Effusion and/or Tamponade
- Pneumonia or other Respiratory Complication
- Coronary Artery Dysfunction
- Valve Dysfunction
- Infection - Deep Sternum
- Infection – Conduit Harvest Site
- Renal Failure
- TIA
- Permanent CVA
- Acute Vascular Complication
- Subacute Endocarditis
- VAD Complication
- Other – Related Readmission
- Other – Nonrelated Readmission

Readmit Reason – Primary Procedure:

- OR for Bleeding
- Pacemaker Insertion/AICD
- PCI
- Pericardiotomy/Pericardiocentesis
- OR for Coronary Arteries
- OR for Valve
- OR for Sternal Debridement/Muscle Flap
- Dialysis
- OR for Vascular
- No Procedure Performed
- Other Procedure
- Unknown

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