

# **EORP VHD II registry**

## **Contemporary management of heart valve disease**

**Bernard Iung**

**Bichat Hospital and Paris Diderot University  
Paris, France**

**On behalf of the VHD II Executive Committee**

# Declaration of interest

- Consultancy for Edwards Lifesciences
- Speaker's fee from Boehringer Ingelheim and Novartis

# Rationale and Objectives

- Valvular heart disease is a leading cause of mortality and morbidity in Europe and the number of patients will continue to grow.
- Management of valvular disease has been subject to a number of changes between the Euro Heart Survey in 2001 and 2017:
  - **European guidelines of 2007 and 2012,**
  - **less invasive treatments:** TAVI, transcatheter edge-to-edge mitral valve repair,
  - introduction of a **multidisciplinary Heart Team approach.**
- **Objectives of the EORP VHD II registry:**
  - to analyse existing practices in the management of patients with native heart valve disease or any previous valvular intervention,
  - to compare these practices with existing ESC guidelines.

# Eligibility Criteria

- **Inclusion Criteria:**

- ✓ Signed Informed Consent,
- ✓ Aged 18 years or older,
- ✓ Severe native valve disease as defined by echocardiography using an integrative approach according to ESC/EACTS Guidelines 2012, **OR**
- ✓ Previous intervention on a cardiac valve (percutaneous balloon dilatation, transcatheter intervention, valve repair, valve replacement).

- **Exclusion Criteria:**

- ✓ Acute infective endocarditis at the time of inclusion,
- ✓ Complex congenital heart disease,
- ✓ Valve intervention study impacting on clinical management.

- **Consecutive screening**
  - ✓ **ALL** patients presenting to hospital for inpatients
  - ✓ **Weekly** (day chosen by the centre) for outpatients
  - ✓ During a 3-month period in each centre
- **Choice of clusters** to represent diverse type of healthcare structures
  - ✓ University / Non-University / Private
  - ✓ With / Without cardiac surgery, interventional cardiology
- **Recommended number of clusters/centres**  
provided by EORP according to country size

# Enrolment

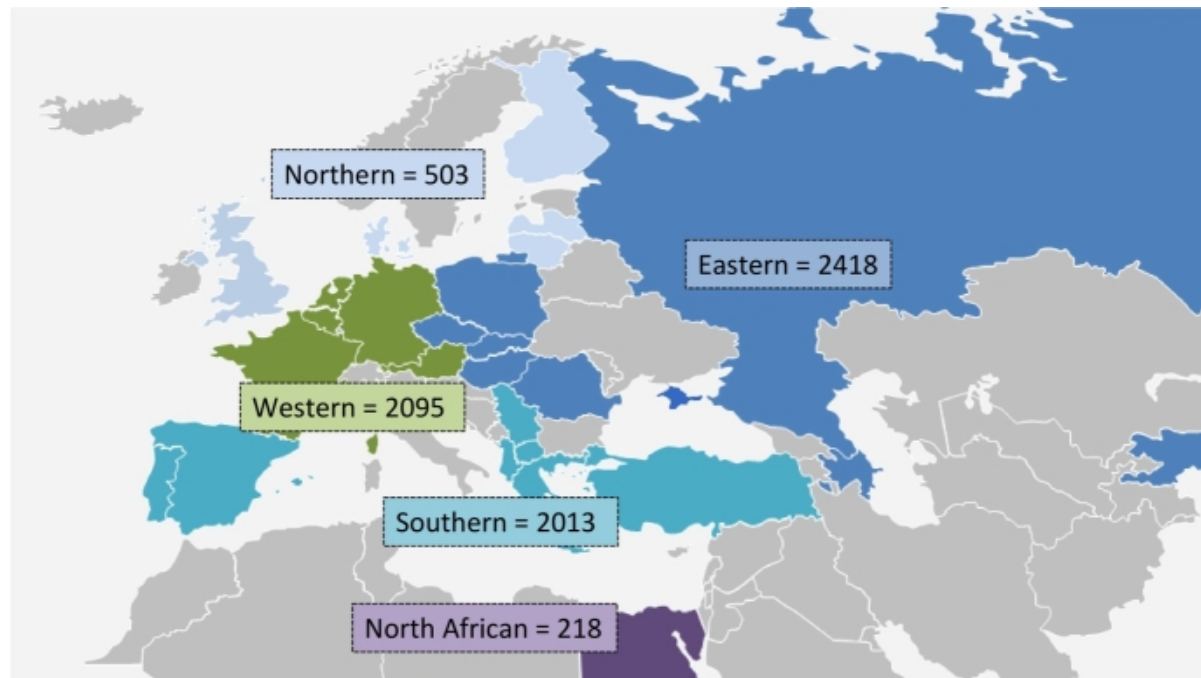
## 7247 patients included

(January-August 2017)

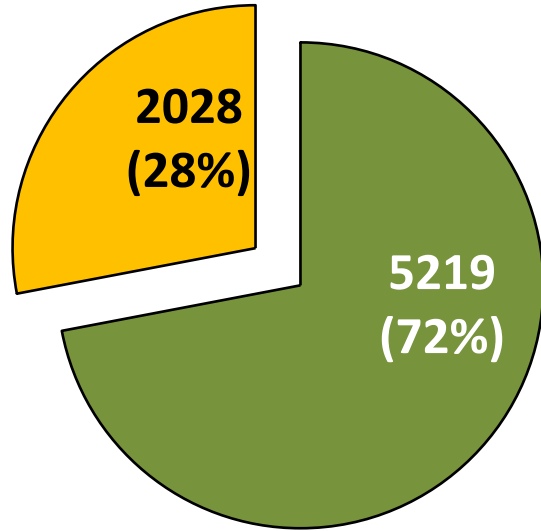
in 222 centres from

28 countries

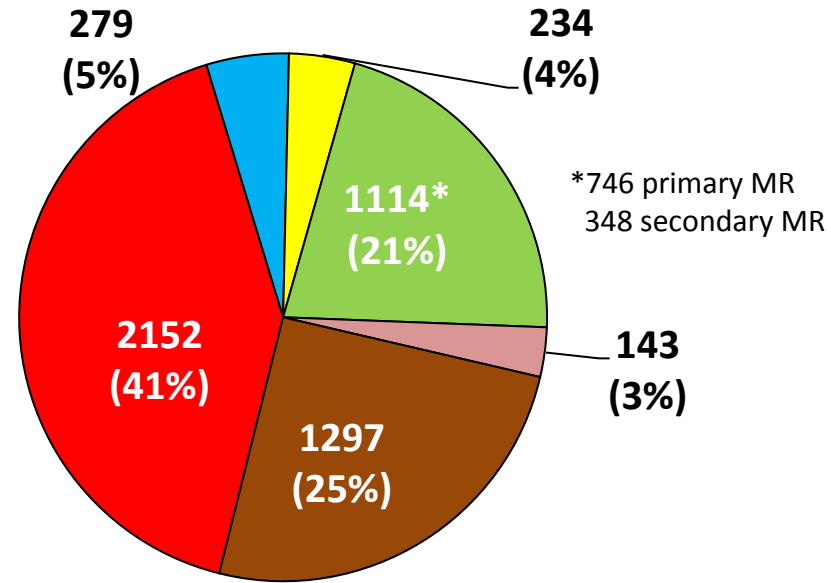
- 4483 (62%) inpatients
- 2764 (38%) outpatients



# Distribution of Valvular Disease

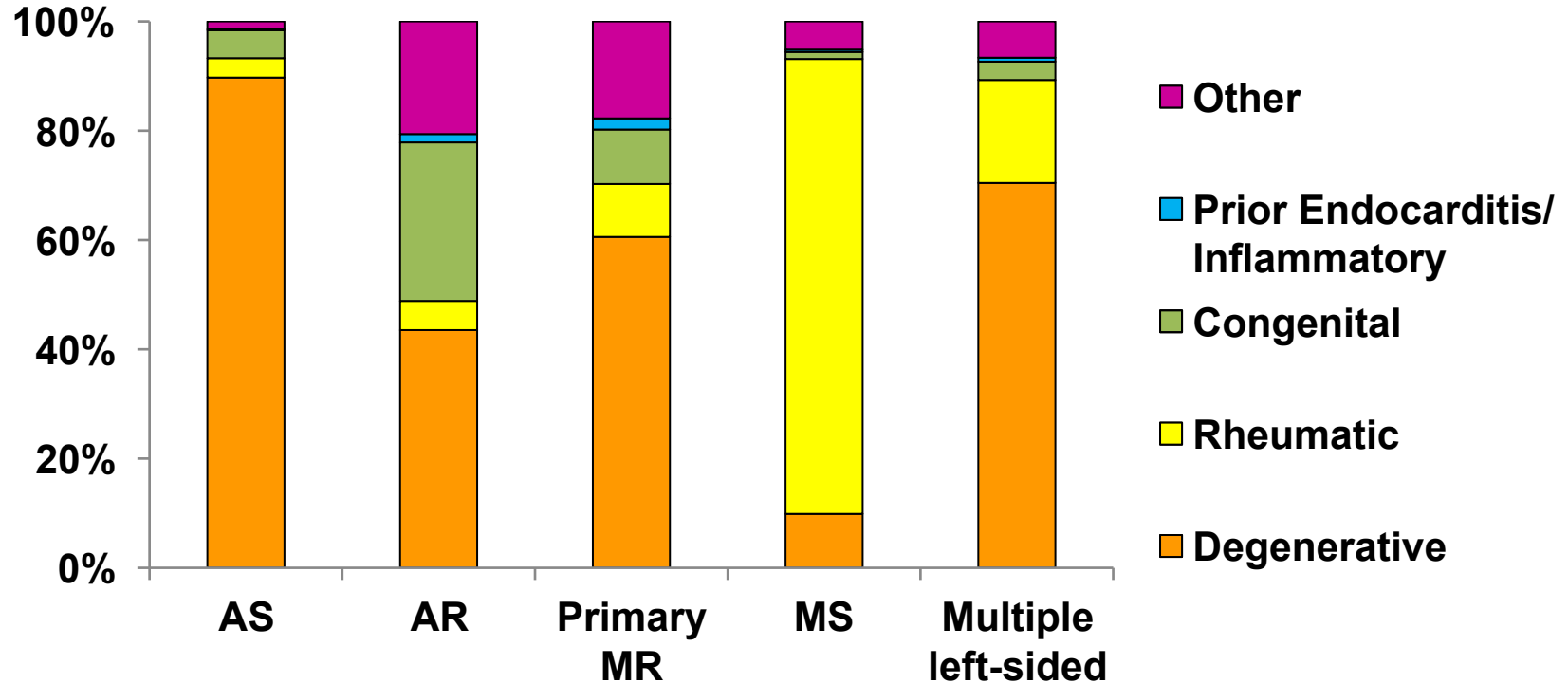


- Native valve disease
- Previous intervention



- Aortic stenosis
- Mitral stenosis
- Isolated right-sided
- Aortic regurgitation
- Mitral regurgitation
- Multiple left-sided

# Aetiologies of Native Valve Disease





# Patient Characteristics

	AS	AR	MS	MR	Multiple left	Isolated right	Previous Interv.
<b>Age (years)</b>	76	58	59	68	75	74	70
	[67-83]	[48-69]	[45-68]	[60-77]	[65-82]	[65-81]	[59-78]
<b>≥ 80 yrs (%)</b>	38	6	6	17	33	26	36
<b>Female (%)</b>	43	19	75	44	54	59	21
<b>HF &lt; 1 yr. (%)</b>	16	11	17	27	24	25	17
<b>NYHA III-IV (%)</b>	37	19	45	47	50	52	26
<b>A. Fib (%)</b>	14	6	46	35	30	57	32
<b>Charlson index</b>	4 [3-6]	2 [1-3]	2 [1-3]	3 [2-5]	4 [3-6]	4 [3-6]	3 [2-5]
<b>Euroscore II</b>	1.9	1.0	1.2	2.0	2.3	2.3	3.0
	[1.1-3.4]	[0.6-1.9]	[0.8-2.2]	[1.0-4.0]	[1.3-4.7]	[1.4-4.3]	[1.6- 6.0]

# Investigations

	AS	AR	MS	MR	Multiple left	Isolated right	Previous Interv.
TEE (%)	10	24	37	37	21	11	14
Stress test (%)							
- all	3.1	4.3	3.8	3.8	1.5	2.1	2.4
- NYHA I	6.1	6.1	7.4	8.1	1.7	0.0	1.6
CT scan (%)	27	21	2	4	16	4	8
CMR (%)	0.7	7.2	3.0	3.0	1.0	7.7	1.1
Coronary Angio (%)	63	44	24	49	54	24	17
Catheterization (%)	8	5	4	11	10	10	4

# Echocardiographic Findings

	AS	AR	MS	MR
LVEF $\geq$ 60%	53	38	57	40
Valve area (cm <sup>2</sup> )	0.7 [0.6-0.9] (n=1876)	-	1.0 [0.9-1.2] (n=208)	-
Mean gradient (mmHg)	48 [40-59] (n=2090)	-	11 [8-15] (n=219)	-
Regurgitation (%)				
- moderate	9		8	
- severe	91		92	
ERO (cm <sup>2</sup> )	-	0.4 [0.3-0.5] (n=115)	-	0.4 [0.3-0.6] (n=630)
Regurgitant volume (ml)	-	65 [52-80] (n=120)	-	58 [42-70] (n=570)

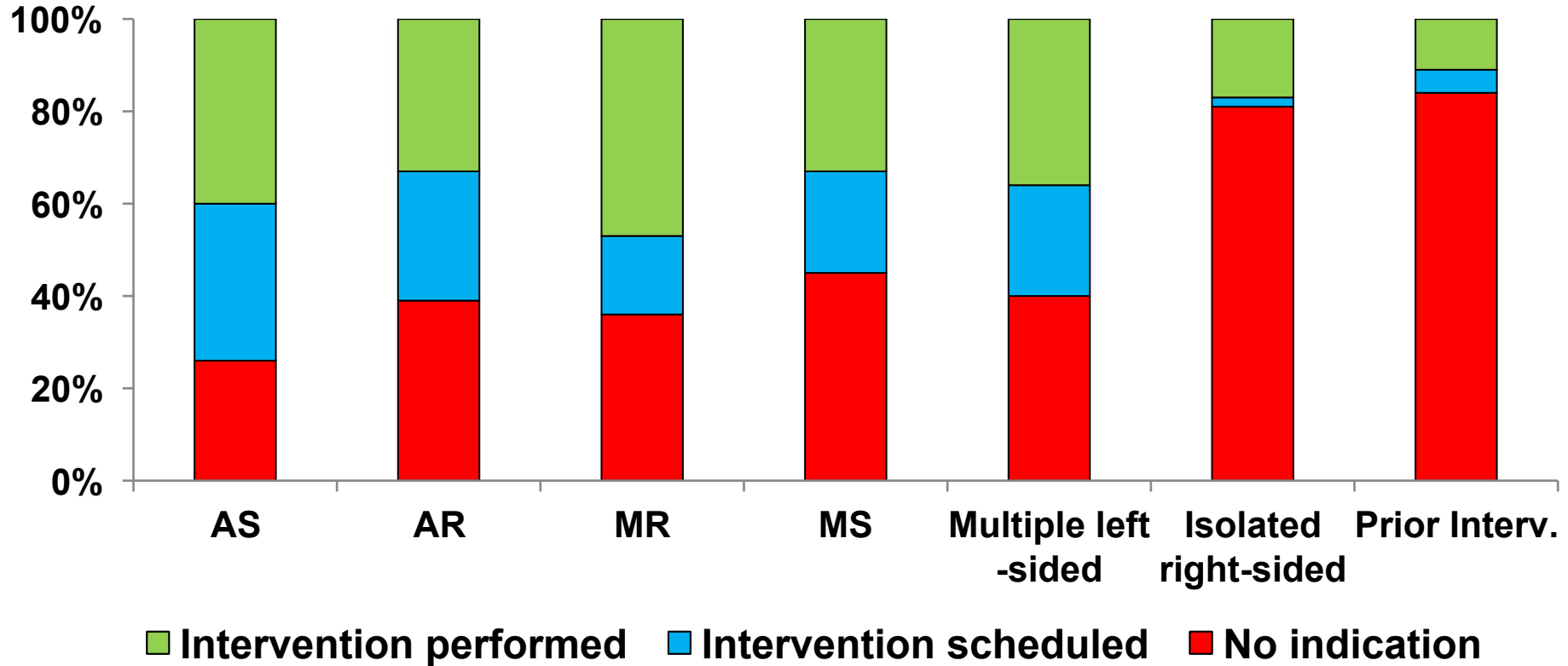
Available  
in > 85%

Misclassified

Available  
Available  
in <45%  
in <60%

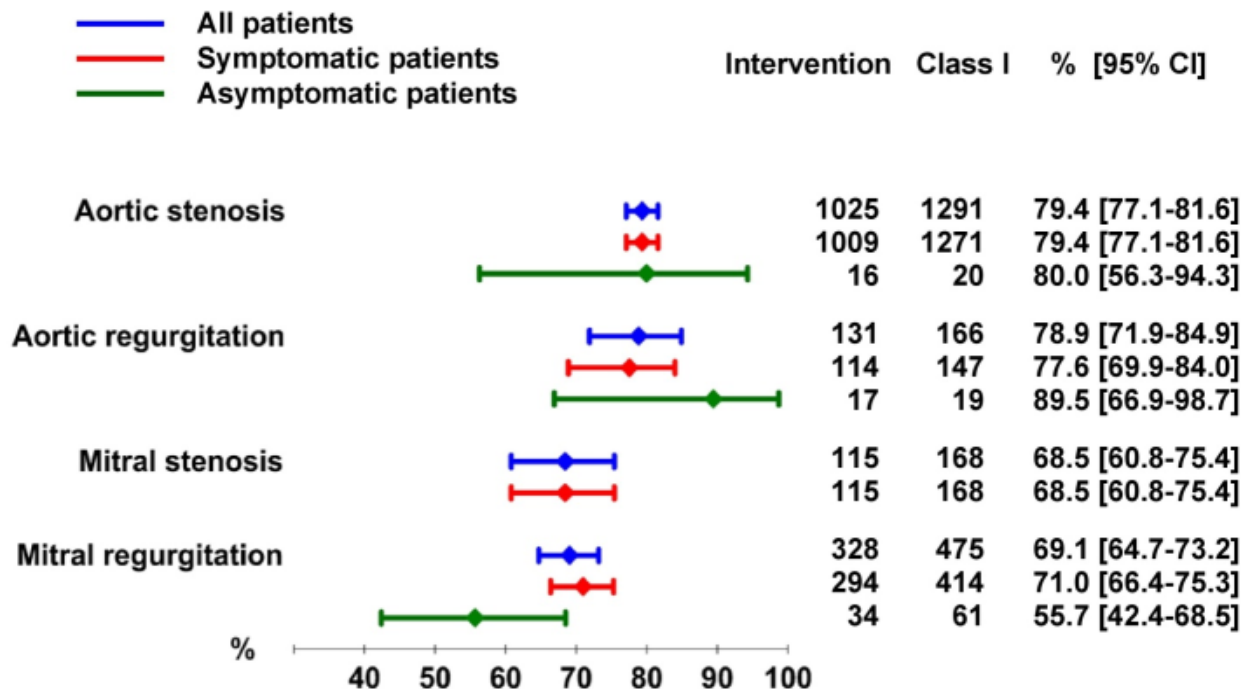


# Indications for Intervention



# Concordance with Guidelines

Percentage of patients with class I recommendations for intervention (2012 ESC/EACTS Guidelines) in whom intervention was scheduled or performed.



# Patients Operated During the Enrolment Period

Single left-sided native valve diseases, n=1435

n=	AS 866	AR 93	MS 109	MR 367
Age (years)	75 [66-83]	57 [48-69]	56 [44-63]	66 [57-74]
Female (%)	44	17	77	42
NYHA III-IV (%)	48	34	52	43
LVEF $\geq$ 60% (%)	54	30	53	43
Charlson index	4 [3-6]	2 [1-3]	2 [1-3]	3 [2-5]
Euroscore II	2.0 [1.2-3.5]	1.1 [0.8-1.9]	1.1 [0.8-2.5]	1.9 [1.0-3.7]

# Patients Operated During the Enrolment Period

## Single left-sided native valve disease, n=1435

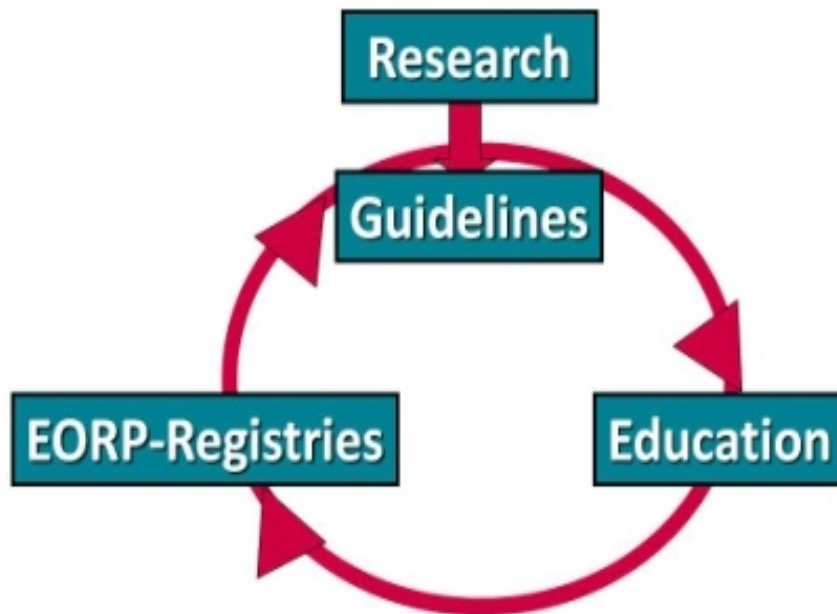
n=	AS 866	AR 93	MS 109	MR 367
<b>Intervention (%)</b>				
Mechanical prosthesis	21	39	42	17
Bioprosthesis	37	31	9.2	14
<u>Valve repair</u>	0.3	22	3.7	52
Autograft/Homograft	3.5	6.5	0	0
<u>Balloon dilatation</u>	1.5	0	45	0
<u>Transcatheter</u>	39	2.2	0	17
<b>Other procedures (%)</b>				
Tricuspid	0.6	2.2	28	33
CABG	15	12	4.6	15
Aortic surgery	4.2	37	0.9	0.8

# Conclusion

- High burden of elderly patients.
- Underuse of quantitative methods in regurgitant valve diseases and rare use of stress testing in asymptomatic patients.
- Good concordance between guidelines and indications for interventions, in particular in aortic valve diseases.
- Late referral to interventions, in particular in mitral valve diseases.



# The ESC Virtuous Circle on Valvular Heart Disease



# VHD II EORP Team

- Prof. Aldo Maggioni, EORP Scientific Coordinator
- Prof. Alec Vahanian, Chair of EORP Oversight Committee
- Mrs. Souad Mekhaldi, Clinical Project Manager
- M. Sébastien Authier, Data Manager
- Mrs. Cécile Laroche, Statistician
- M. Charles Taylor, IT Specialist

# VHD II Executive Committee Members

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and Investigators !