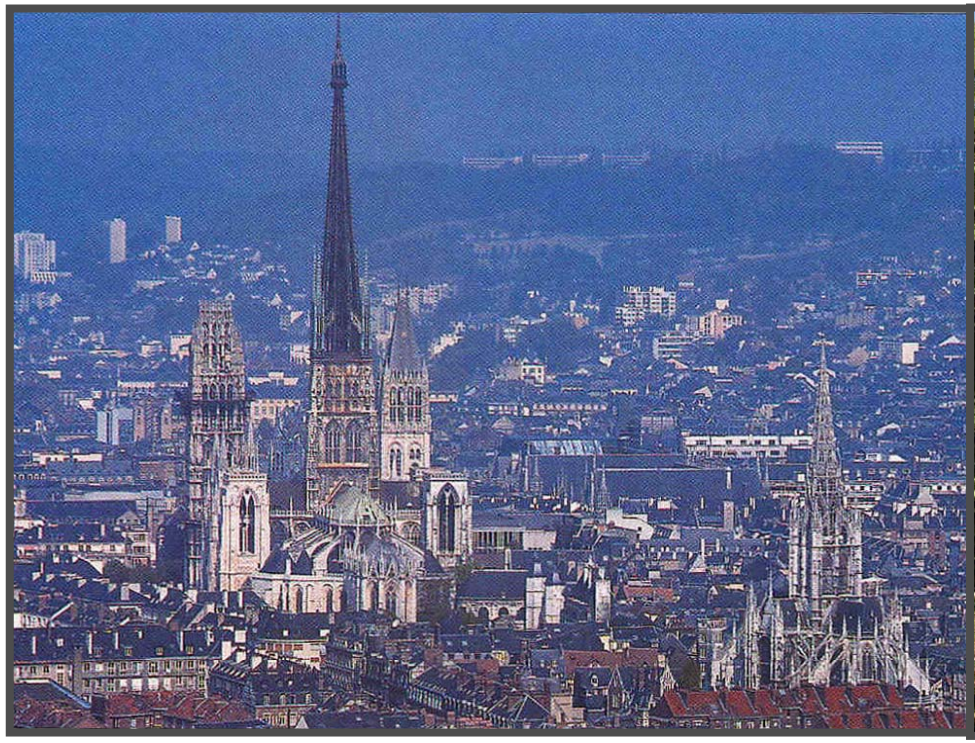
# Heart Team For TAVI

# Who and How?

2nd TAVI Summit 2012, Seoul Corea



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*Charles Nicolle Hospital*

*University of Rouen, France*

# Disclosure

**Edwards Lifesciences**

Consultant
Training / proctoring activities

The beauty and strength of TAVI has been to reinforce the relationship between interventionalists and surgeons.

**But it is not enough !**

A dedicated *multidisciplinary team* (Heart Team) is crucial to ensure a successful program

# A new era of partnership

## for patient screening, completion of the procedure and assessment of the results

General Practitioner

Radiologist

Patient's relatives

Referring Cardiologist

Patient !

Anesthesiologist

The Heart Team

Echocardiographist

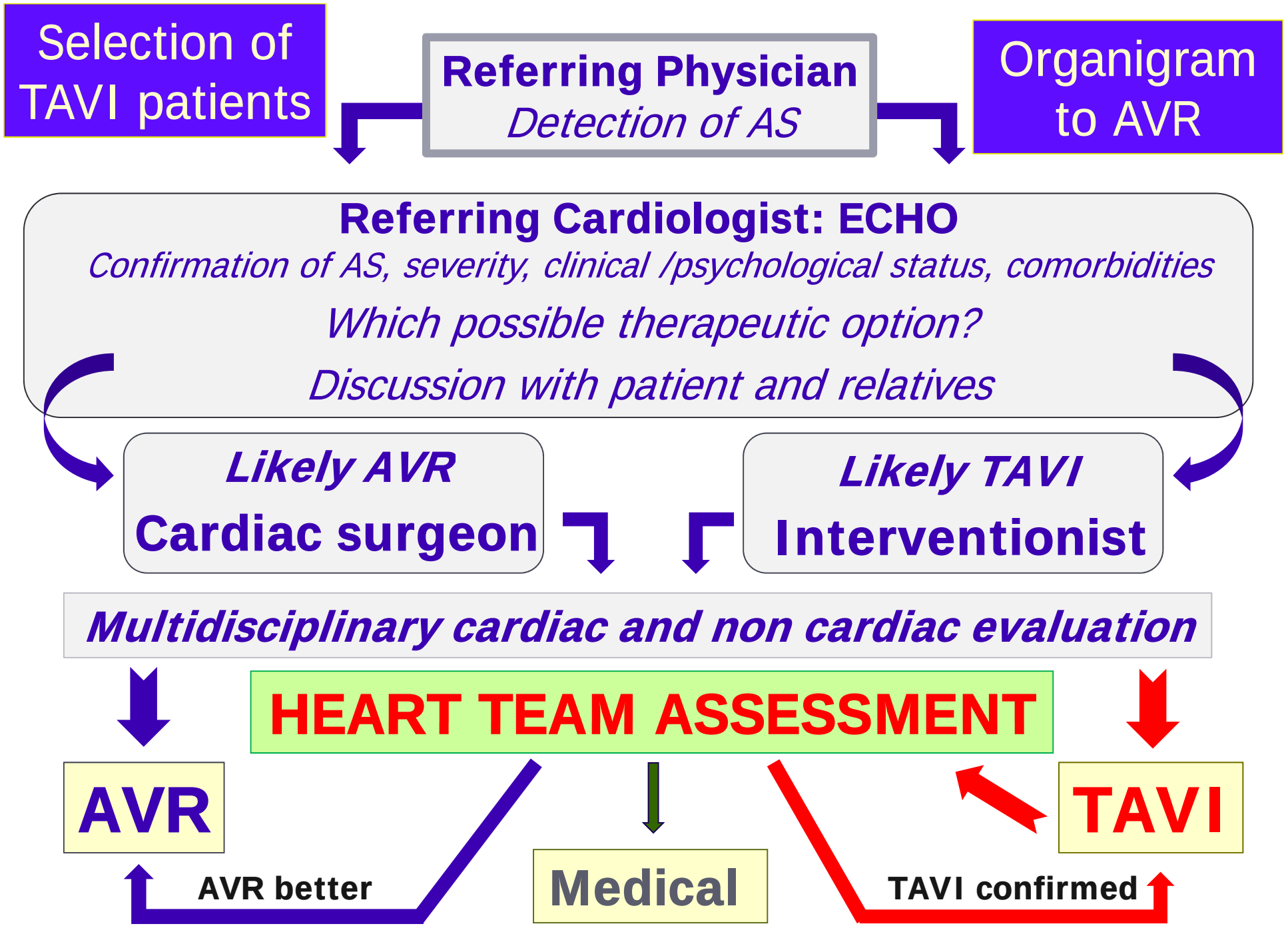
Nurses
Technicians

Geriatrician

Other Specialists

**Cardiac surgeon**

**Interventional Cardiologist**


Selection of TAVI patients
Referring Physician
Detection of AS
Organigram to AVR
Referring Cardiologist: ECHO
Confirmation of AS, severity, clinical /psychological status, comorbidities
Which possible therapeutic option?
Discussion with patient and relatives
Likely AVR
Cardiac surgeon
Likely TAVI
Interventionist
Multidisciplinary cardiac and non cardiac evaluation
HEART TEAM ASSESSMENT
AVR
TAVI
AVR better
Medical
TAVI confirmed

# Three questions that the HEART TEAM must answer:

**1- Is TAVI an acceptable option for the patient?**

*Recommendations, Risk / Benefit*

**2- Is the anatomy suitable?**

(Need to decrease the risk of complications)

**3- What is the safest approach?**

Transfemoral ? Transapical? Trans-aortic ( Edwards)
Transfemoral ? Axillary ? (Corevalve)

# Is TAVI an acceptable option?

## *TAVI Clinical Indications*

### ***NEW EUROPEAN GUIDELINES (ESC 2012)***

Severe aortic stenosis in sympto nts

1) Hi

2) y

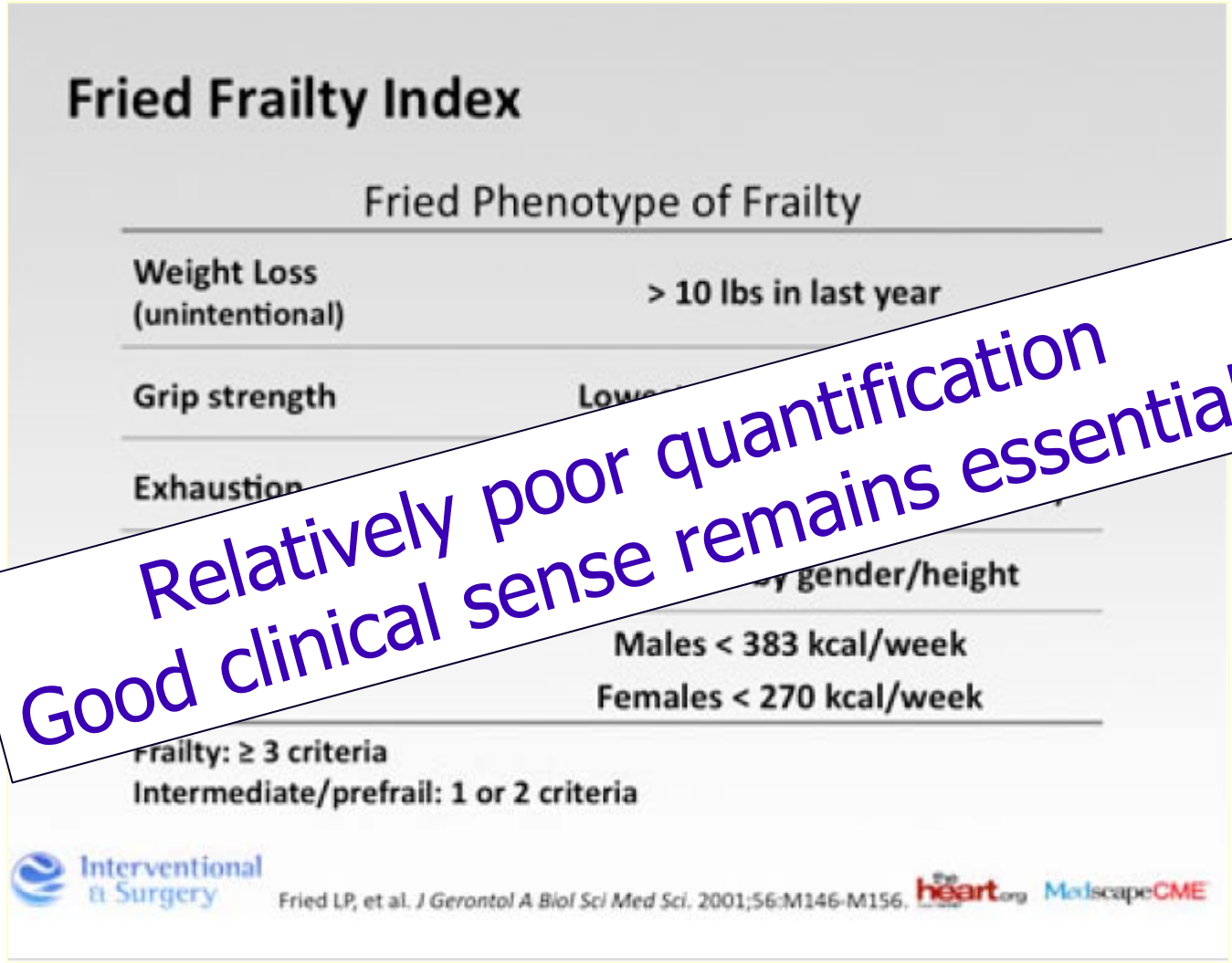
- TAVI should not be performed in patients at intermediate risk
-TAVI should not be performed if life expectancy < 1 year (comorbidities)
- The good clinical sense is primordial (over Scores "numbers") in patient selection

...ont frailty

Consensus:

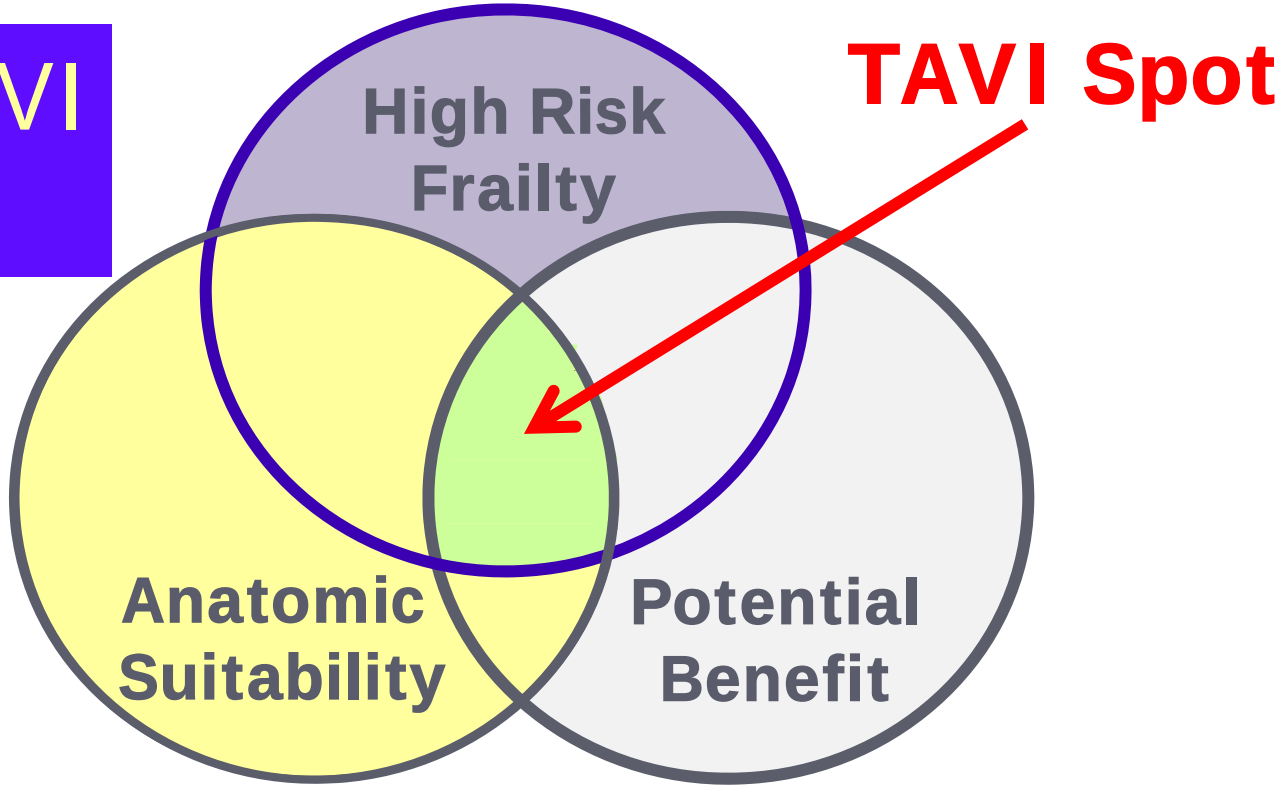
...diologist / Surgeon / Anesthesiologist / Geriatrician

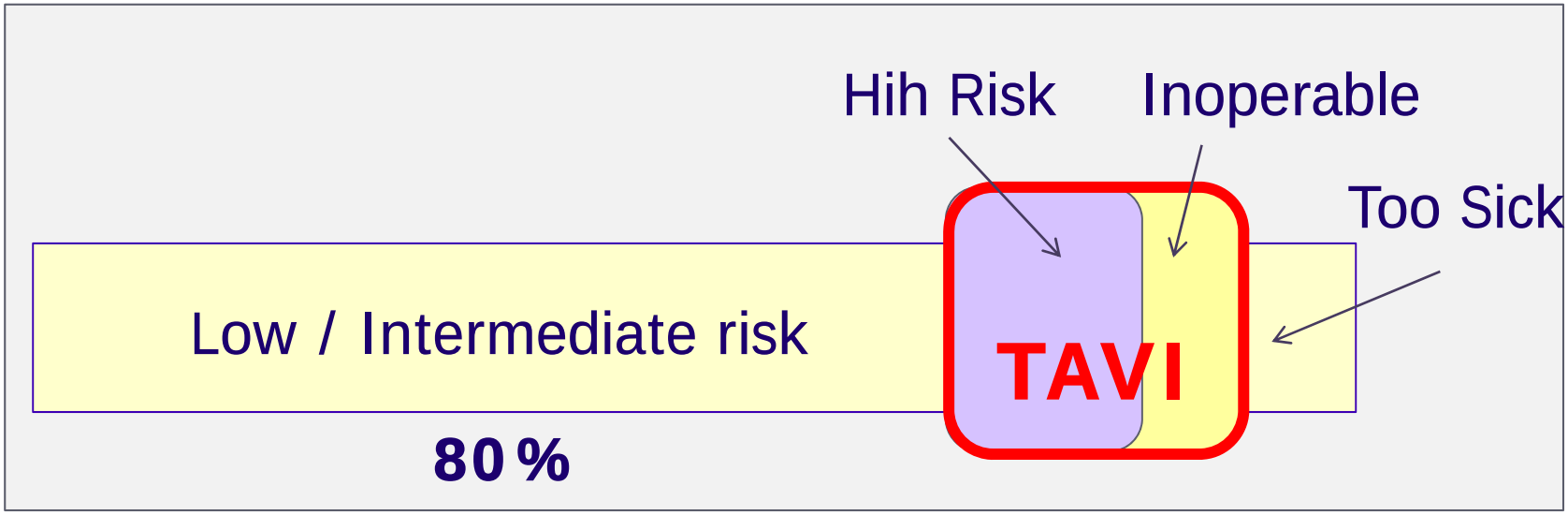
# *ASSESSMENT of FRAILTY*
## *(Geriatrician, Anesthesiologist)*




Relatively poor quantification
Good clinical sense remains essential!

# Scope of TAVI In 2012



# Is the anatomy suitable for TAVI?

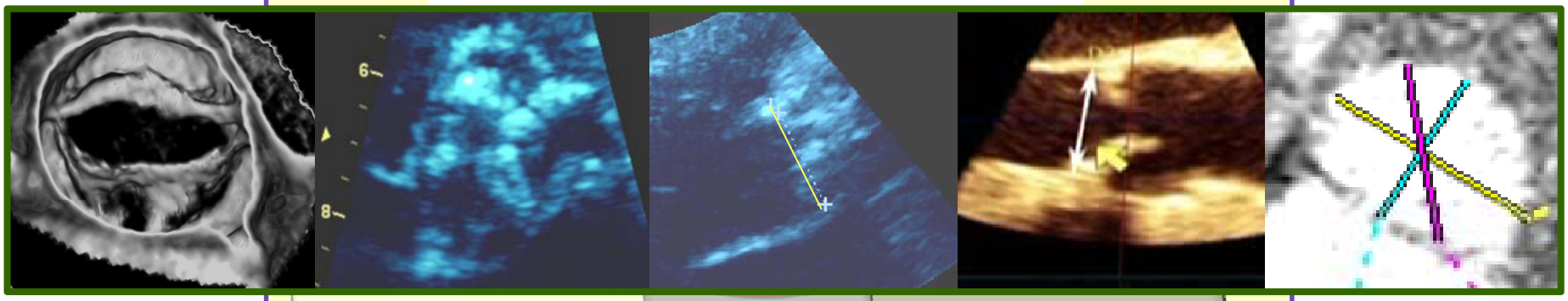
*An essential multidiciplinary approach*

**Echocardiography**

Aortic valve

anatomy, calcium distribution, thrombus, vegetations

**Annulus size measurement**




**Angio**

**MSCT**

# Is the anatomy suitable for TAVI?

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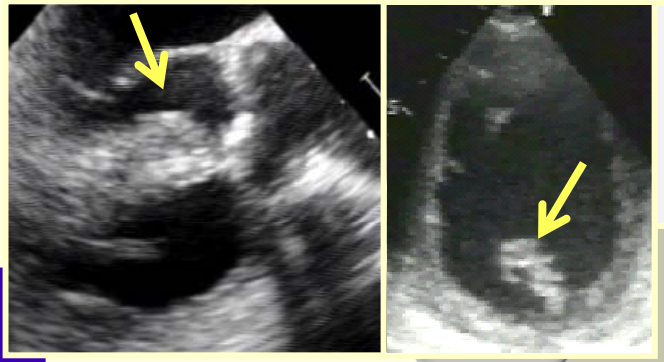
Aortic valve

anatomy, calcium distribution, thrombus, vegetations

**Annulus size measurement**

Left ventricle

hypertrophy, thrombus, bulging septum, LV function



**Depressed LVEF**

- *Stress Echo*
- *Staged BAV ?*

**Angio**

**MSCT**

# Is the anatomy suitable for TAVI?

*An essential multidiciplinary approach*

**Echocardiography**

Aortic valve

anatomy, calcium distribution, thrombus, vegetations

**Annulus size measurement**

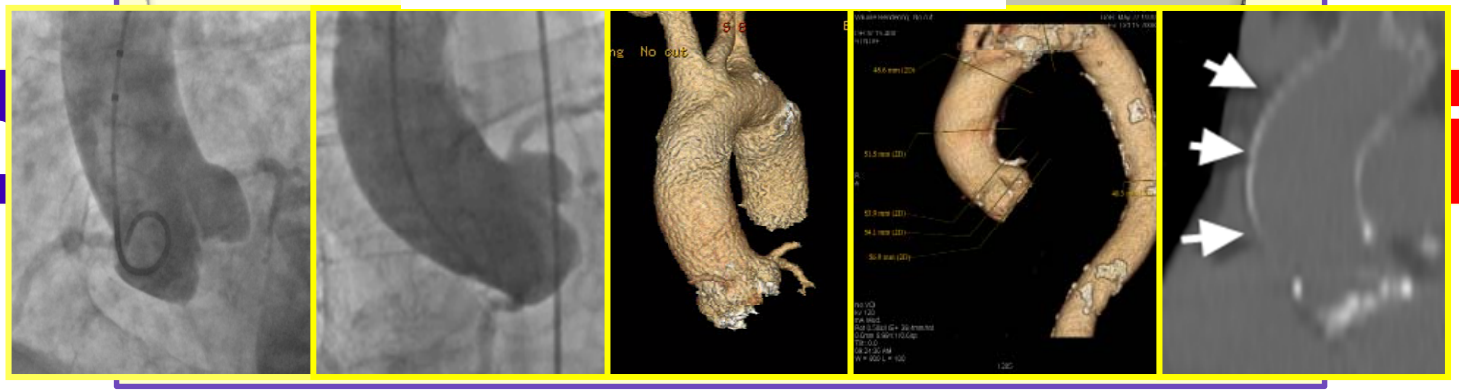
Left ventricle

hypertrophy, bulging septum, LV function

Aorta

size, angulation, disease

**An**



# Is the anatomy suitable for TAVI?

## *An essential multidiciplinary approach*

**Echocardiography**

Aortic valve

anatomy, calcium distribution, thrombus, vegetations


**Angio**

Coronary arteries

associated CAD

staged PTCA?

distance ostia to annulus

**MSCT**

# Is the anatomy suitable for TAVI?

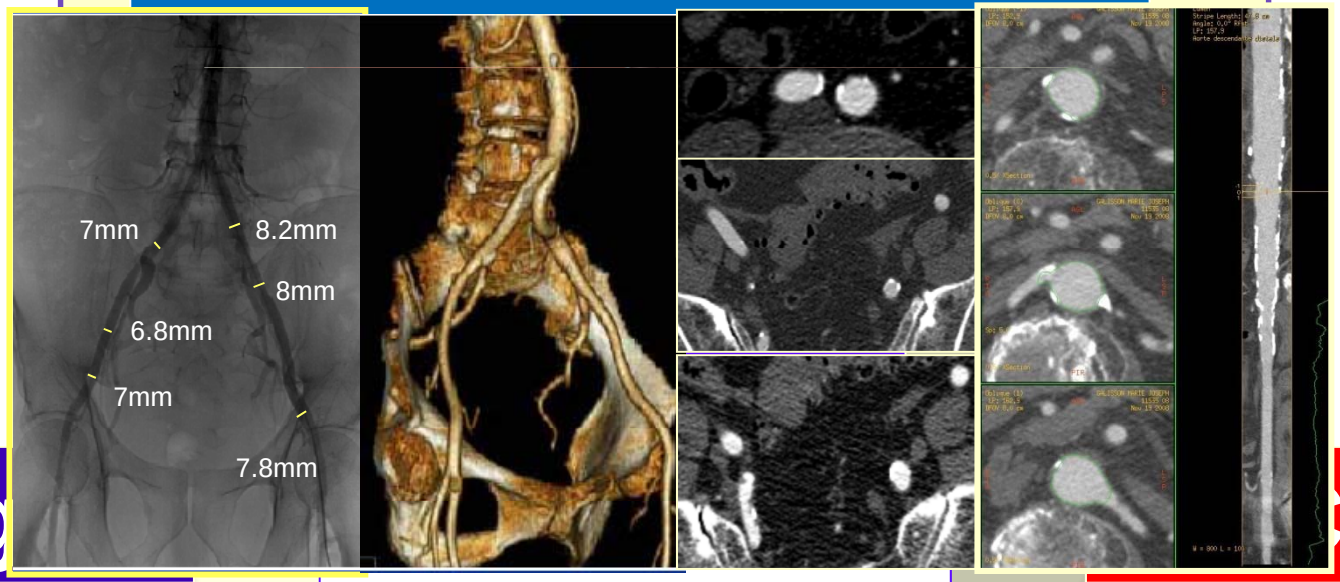
## *An essential multidiciplinary approach*

**Echocardiography**

Aortic valve

anatomy, calcium distribution, thrombus, vegetations

**Annulus size measurement**




13mm

**Ang** **T**

**Vascular access**

Anatomy, tortuosities, minimal diameters, calcification, disease

# Post-evaluation HEART TEAM Meeting

Radiologist

ICU Cardiologist

Anesthesiologist

Geriatrician

Research Nurses

Echocardiographer

Heart surgeons

Interventional cardiologists

*Other specialists if necessary*

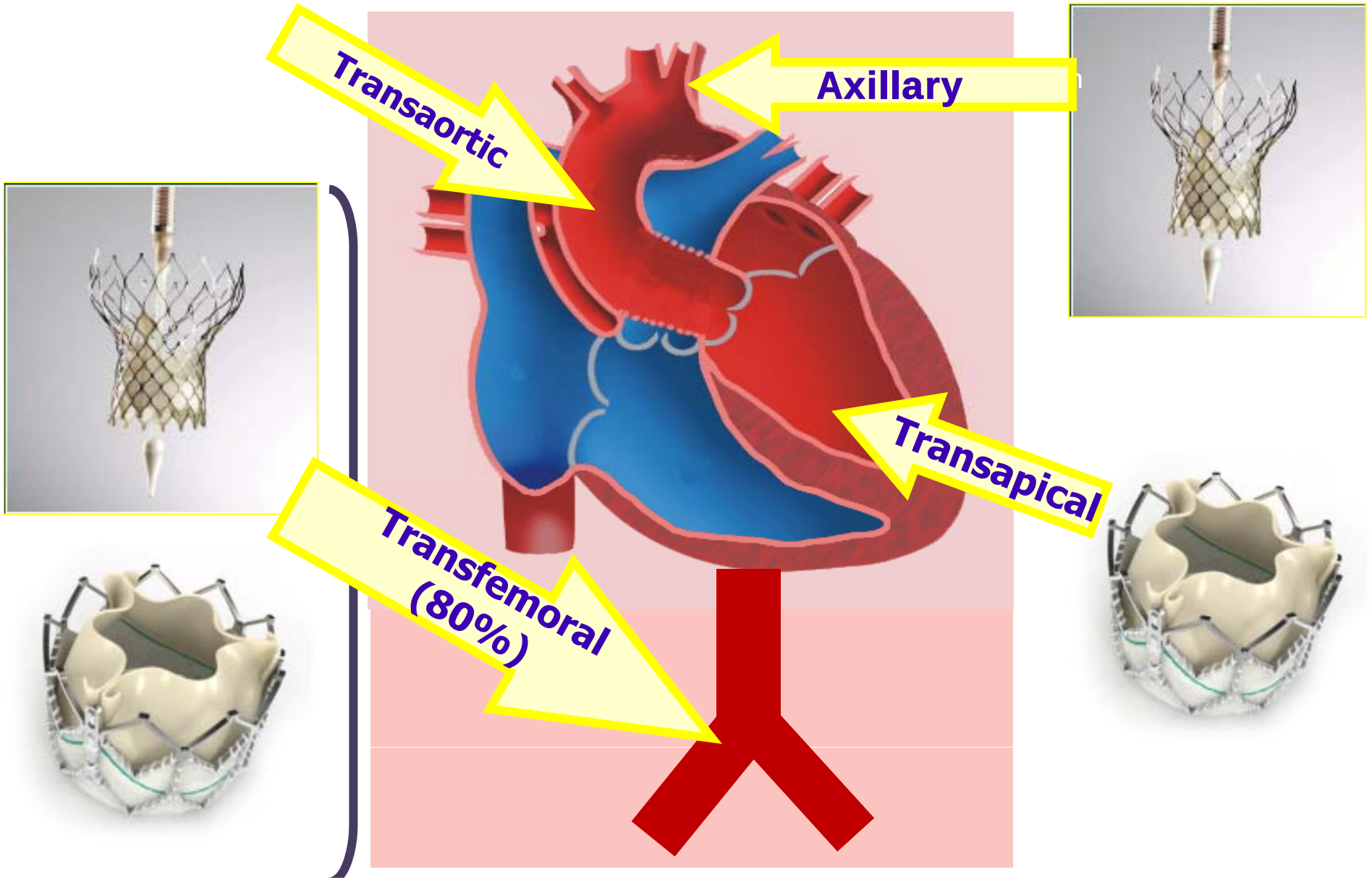
Any cardiac or non cardiac contra-indication?
Any relative contra-indication?
Any need for staged PTCA or balloon valvuloplasty?

# TAVI suitability: recent concerns

- Low LVEF with no contractility reserve
- Severely calcified bicuspid valve
- Bulging septum with subvalvular gradient
- Low LM insertion (<10mm)
- Bulky calcified leaflets
- Specific contra-indications to TA approach

# The Heart Team during TAVI

## Current approaches



# The Heart Team during TAVI

TEE echocardiographer

Anesthesiologists

Nurses dedicated to
valve crimping and rapid pacing

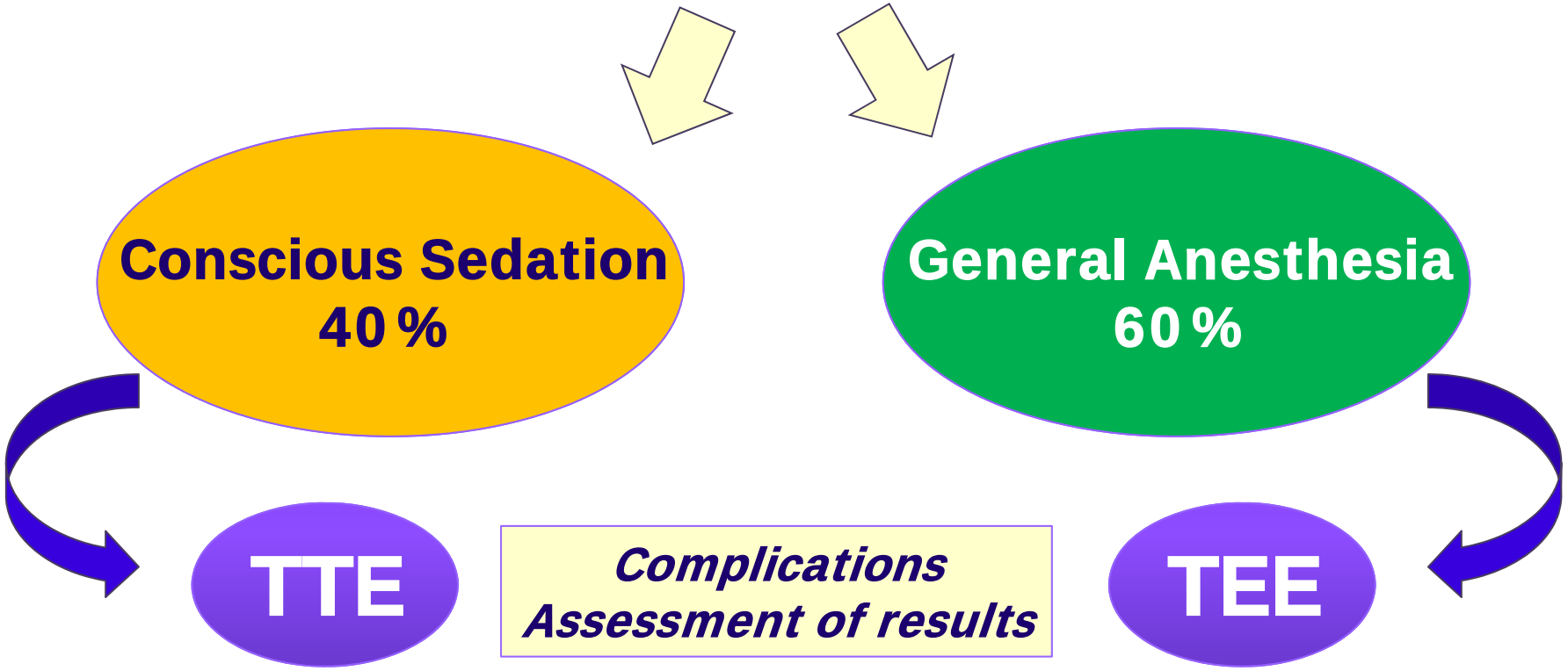
**Transapical**

**Ideally in HYBRID room**

- One Interventional Cardiologist
- Two Cardiac Surgeons

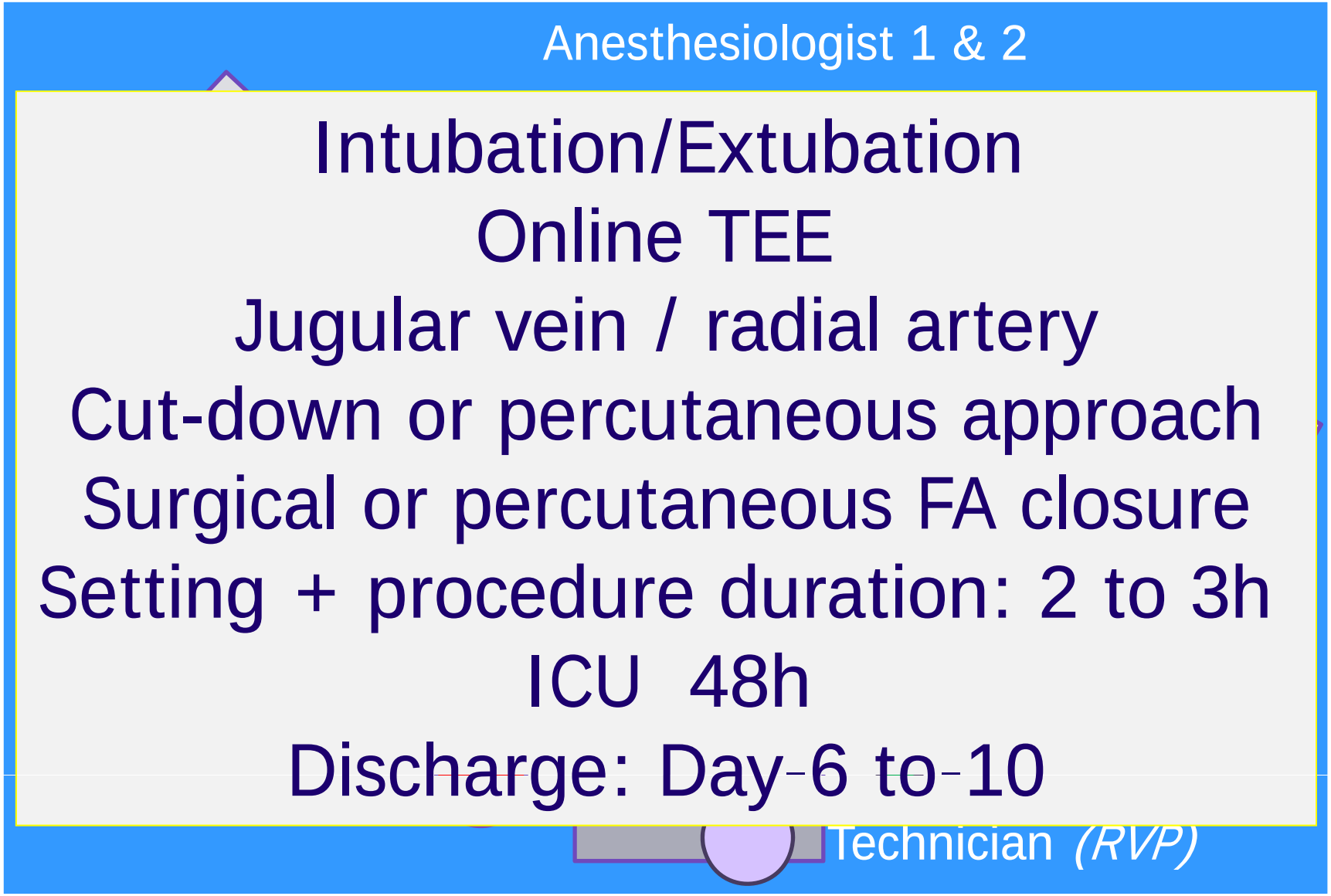
# Which Heart Team during TAVI Transfemoral

*In 2012: 2 strategies*



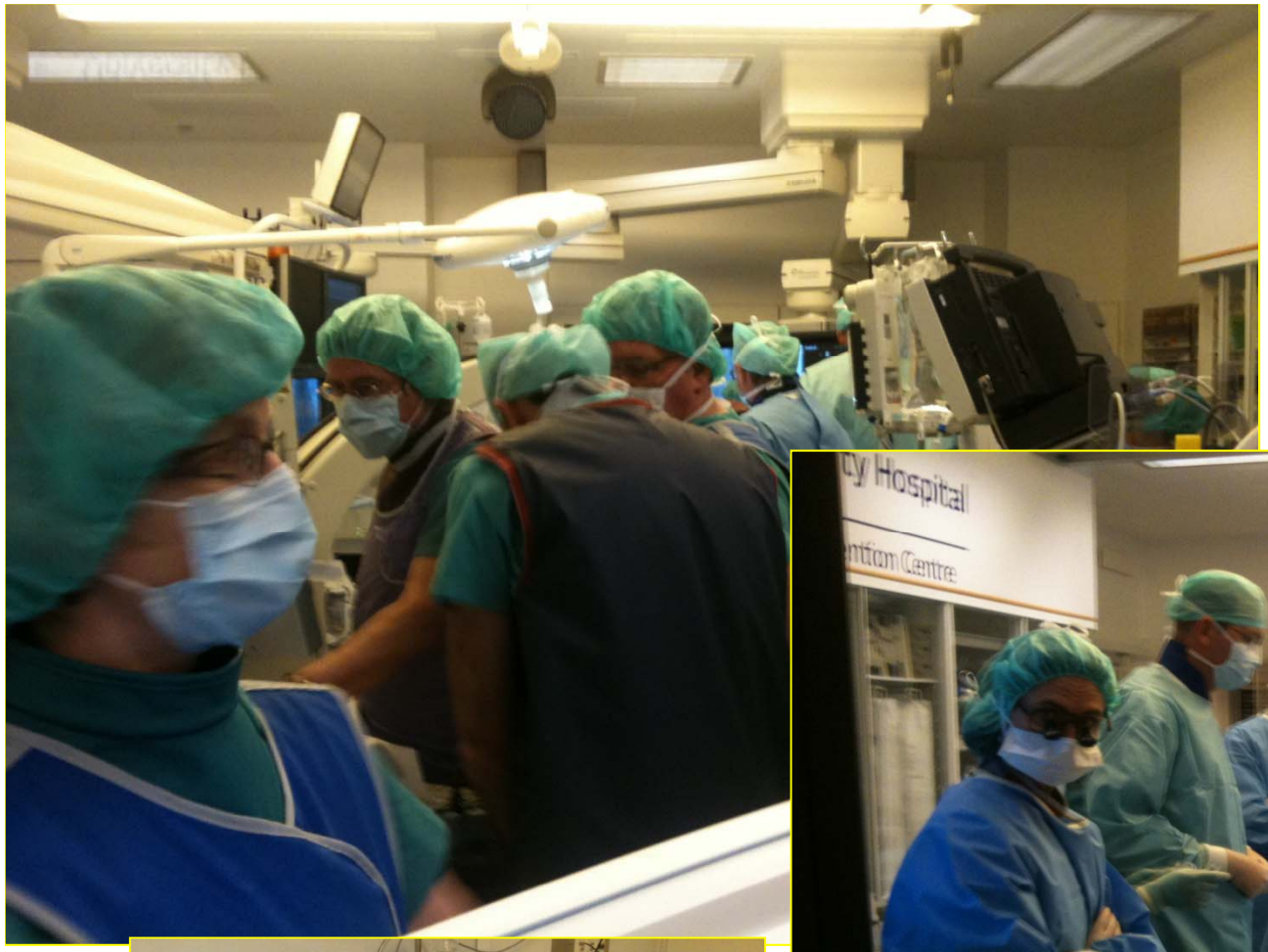
# TF-TAVI: Edwards: General anesthesia

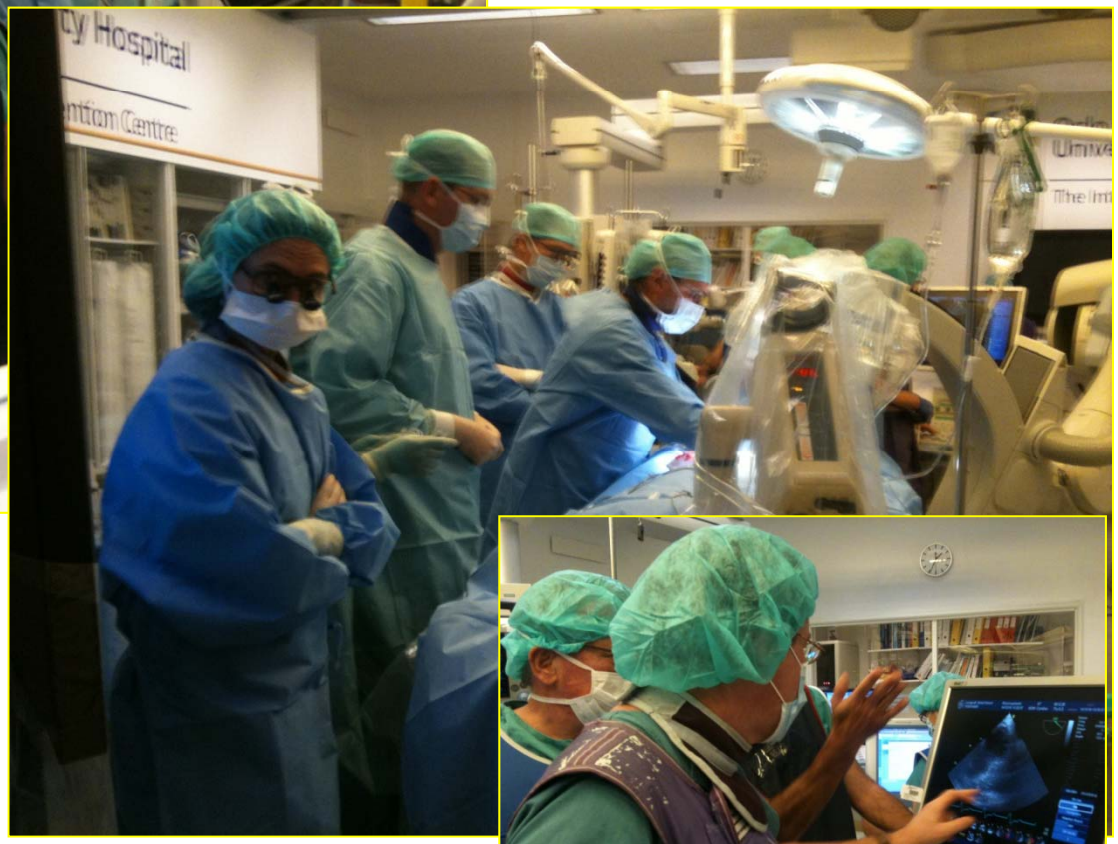
*Room set-up: Maximalist approach*

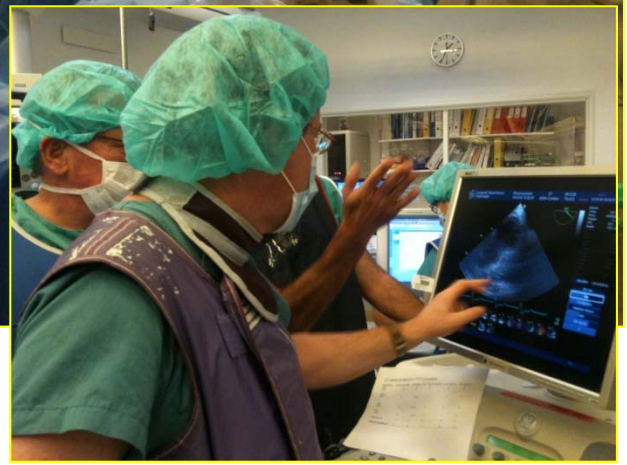


# TF-TAVI
# Maximalist approach

*20 team members*
*in the Cath-lab*

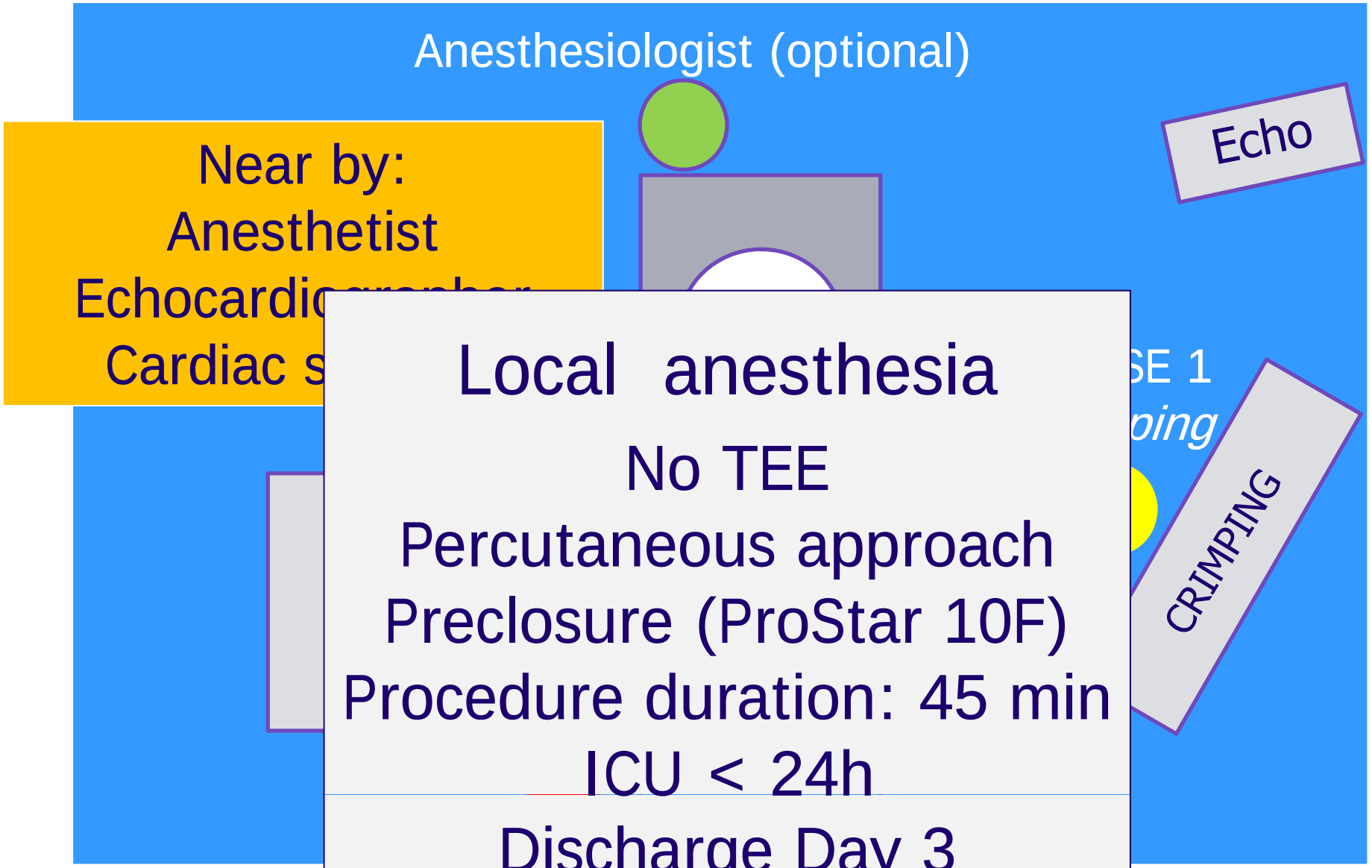




# TF-TAVI: Edwards: Conscious sedation

*Room set-up: Minimalist approach (Rouen since 2002)*




Local anesthesia

No TEE

Percutaneous approach

Preclosure (ProStar 10F)

Procedure duration: 45 min

ICU < 24h

Discharge Day 3

# Rouen TF Edwards
# Minimalist approach (100%)
# 5 persons in cath-lab

**Conversion to**
*G.A.,*
*Heart Surgery,*
*Vasc. surgical repair*

**< 1%**

**(JACC Interv 2012)**

# Heart Team: POST-TAVI phase

-In-hospital management

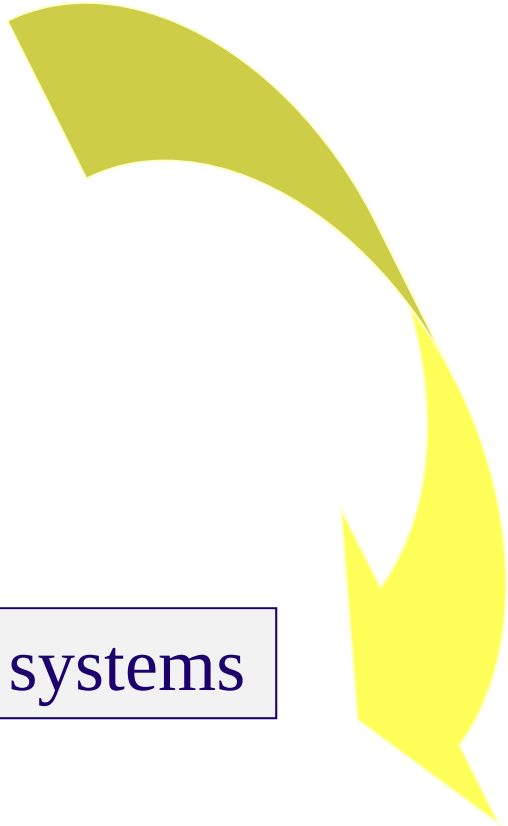
-Compliance to Registries

(ideally with a research nurse)

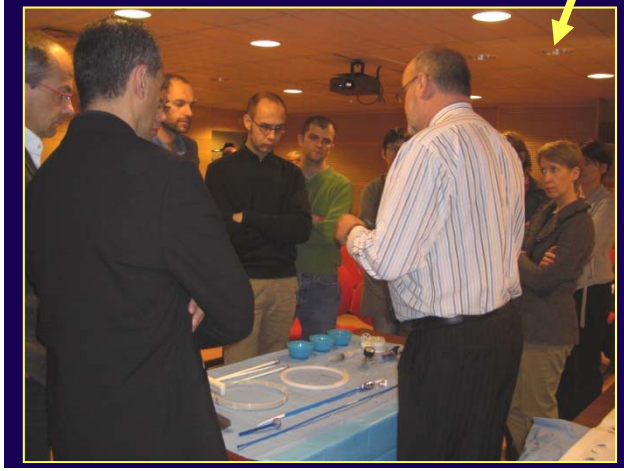
-Organize the follow-up

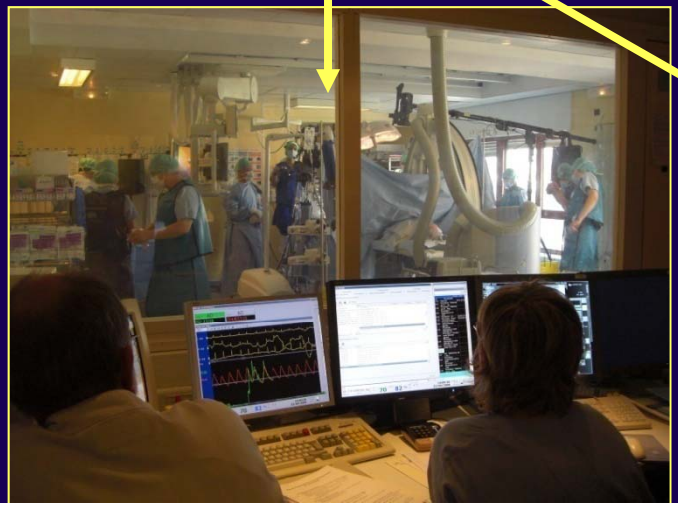
# Need for an optimal training program

- Staff and Team preparation
- Equipement, imaging modalities
- Valve crimping
- Patient Screening
- Rapid ventricular pacing
- Use of large sheath and delivery systems
- Pre-implantation valvotomy
- Valve positioning and delivery
- Management of cardiac / non-cardiac complications



- Simulators
- Didactic
- Cases review
- Hands on
- Live cases





# On site-proctoring

- Organized by both companies
- Clinical assistance for the first cases
- After review of all screening data
- Ideally ≥ 2 cases/day (pre-selected cases)
- Same 2 operators (main + assistant)

# Conclusions

- Building a solid and enthusiastic Heart Team is crucial for any center planning to start a program of TAVI
- An outsanding cooperative work is required for patient selection, completion of the procedure, management of complications, post-TAVI care and follow-up
- Optimal training and personal preparation of each member of the Heart Team are the key for safe and successful TAVI procedures

# Training is the KEY !

- Acquiring basic, then advanced device specific skills
- Acquiring knowledge of valve disease (clinical, catheterization techniques, imaging)
- Working in a sterile environment
- Understanding the equipment
- Anticipating and treating complications

# Need for an optimal training of the whole Heart Team

## Valve crimping

Specific training of nurses
by the compagny's clinical specialists

Assistance for the first 10 cases
(Edwards)