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hybrid OR applications

- cardiac & vascular (today's discussion)
- neurology
- trauma
- orthopedics
- urology
- OB/GYN
room or suite location?
hybrid OR suite adjacent to OR suite and interventional suite
hybrid OR within a high sterility interventional suite
hybrid OR suite within an interventional suite
hybrid operating rooms
a unique environment
operating room or cath lab
hybrid operating rooms
a unique environment
dynamic design approach
operating room or cath lab
tavr positions
(transaortic valve replacement)

- IR Technologist & Balloon Vendor
- Interventional “C” arm
- Cardiothoracic Surgeon, IR Cardiologist, IR Cardiologist Assistant, Technologist
- Scrub Nurses
- Perfusionist
- Anesthesiology Team
open heart surgery positions

- IR Technologist & Balloon Vendor
- Interventional “C” arm
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- Perfusionist
- Anesthesiology Team
reflected ceiling plan

3 Equipment Booms
2 Surgical Light Booms
2 Double Monitor Booms
1 Telescopic Utility Column
1 Philips Ceiling hung “C” Arm
1 Philips Ceiling Hung Large Monitor
mep challenges: decipher & translate
ASHRAE/ASHE standard 170-oct 2012

- operating room airflow design
  - positive pressure diff of +0.01” wc
  - individual temperature control
  - airflow shall be unidirectional, downwards
  - average velocity of the diffusers shall be 25 to 35 fpm
  - array shall extend a minimum of 12” beyond the footprint of the surgical table on each side
  - <30% of the array area shall be used for non-diffuser uses
  - at least two low side wall return or exhaust grilles spaced at opposite corners
  - the bottom of these grilles installed approximately 8” above the floor
  - minimum 20 air changes of recirculated air
cfd model
or premanufactured ceilings
modular solutions for hospital operating rooms

- Cleanroom grade airflow and contamination control for hospital operating rooms and other critical healthcare applications
  - Significantly more stringent control than typical hospital environments
- Sole source responsibility versus field-built systems
  - Factory-designed and fabricated
  - All-inclusive modules can include integral boom mount(s), lights, filtration, air balancing, sprinklers, medical gas connections and more
  - Custom designed to fit your application requirements
- Shorter cycle from construction start to fully operational and generating revenues
  - Construction time reduced versus field-built system
  - Minimizes time spent coordinating multiple trades
fiscal management
Winchester Experience

Year 1
- Cardiac: 50
- Vascular: 50
- Thoracic: 50
- Neurology: 50
- OBGYN: 50

Year 2
- Cardiac: 250
- Vascular: 100
- Thoracic: 50
- Neurology: 50
- OBGYN: 50

Year 3
- Cardiac: 300
- Vascular: 150
- Thoracic: 50
- Neurology: 50
- OBGYN: 50
most expensive procedure room in hospital

$3.5-6M (Advisory Board, 2014)
Construction: 47%
Angio Equipment: 29%
Rm Equipment: 24%
Total Costs: $4.18M
state of the art
transcatheter
aortic valve
replacement
program

50% mortality in 2 years
### Project Team List

- Advanced valve cardiac surgeon
- Interventional cardiologist
- Department of cardiology representatives
- Vascular surgeons
- Anesthesiologists
- Perfusionist representative
- Infection control representatives
- Surgical services leadership
- Cardiac cath lab leadership
- Facilities and construction leadership
- Purchasing department
- Information systems and epic representatives
- Environmental services leadership
- Design team
preparing staff for new technology
operational costs

- 2 surgeons
- 7 cath lab staff and or surgical pa
- anesthesiologist
- perfusionist
- echo technologist
- cardiologist or other imaging specialist

labor cost

$1,400/hour

x 3 hours

$4,200/procedure