

**New York State Department of Health**

# **Hospitals and Nursing Homes of the Future**



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# **Factors Driving the Need for Change:**

- **Technology**
- **Patient Preference and Acuity**
- **Fiscal Pressures – Providers, Payors, Employers**
- **Reserve Capacity**
- **Staffing Issues – Cost, Recruitment, Shortages**
- **Difficulty Navigating the Convolutated System**
- **Competition-unregulated and regulated entities**

# **Factors Specific to Acute Care:**

- **Out Migration of Services**
- **Relationship with Physicians**
- **Availability of Capital**



# **Factors Specific to Long Term Care**

- **Consumer Preference for Independence, Least Restrictive Setting**
- **Integration with the Community**
- **Adaptability for Differing Acuity & Individual Needs**
- **Specialty Services**

# Strategies for the Future

- **Pay for Performance / Quality Improvement**
- **Digital Hospitals**
- **Centers of Excellence**
- **Flexibility**
  - **Reimbursement**
  - **Program**
  - **Construction**



- ❖ **Green Technology**
- ❖ **Improved / Flexible Work Environment**
- ❖ **Alternative Delivery Models**
- ❖ **Adaptable Construction**



# Consumers are more Discerning



St. Peter's Hospital  
Albany, NY

- **Patient/Resident-Centered Care**
- **Fast changing technology & expectations**
  - **accelerates obsolescence of Physical Plant**
  - **increases competition among providers**

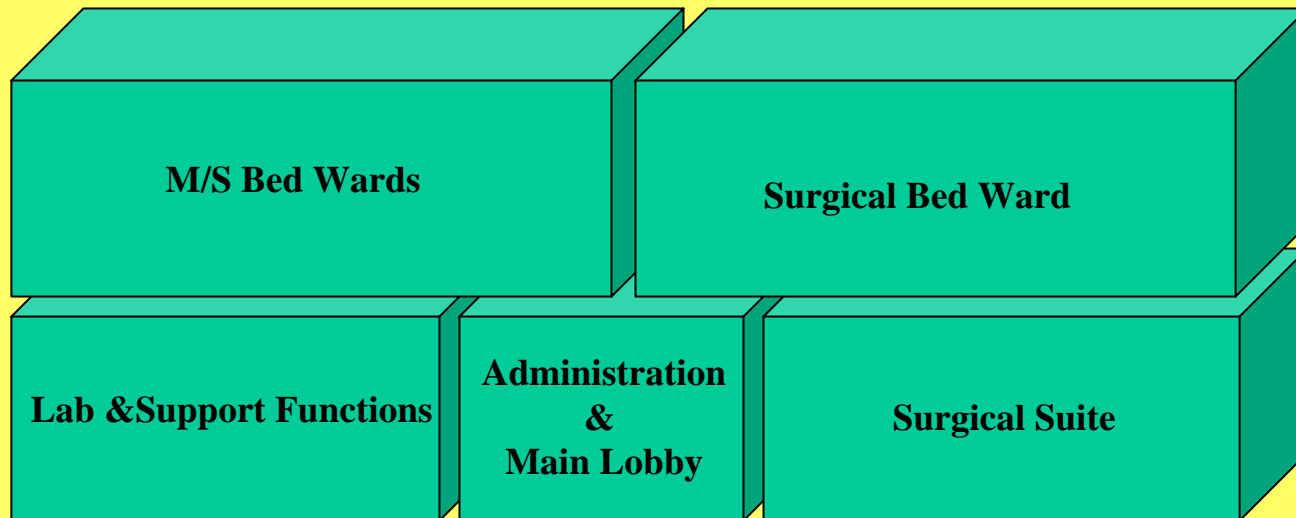
# Acute Care Hospitals



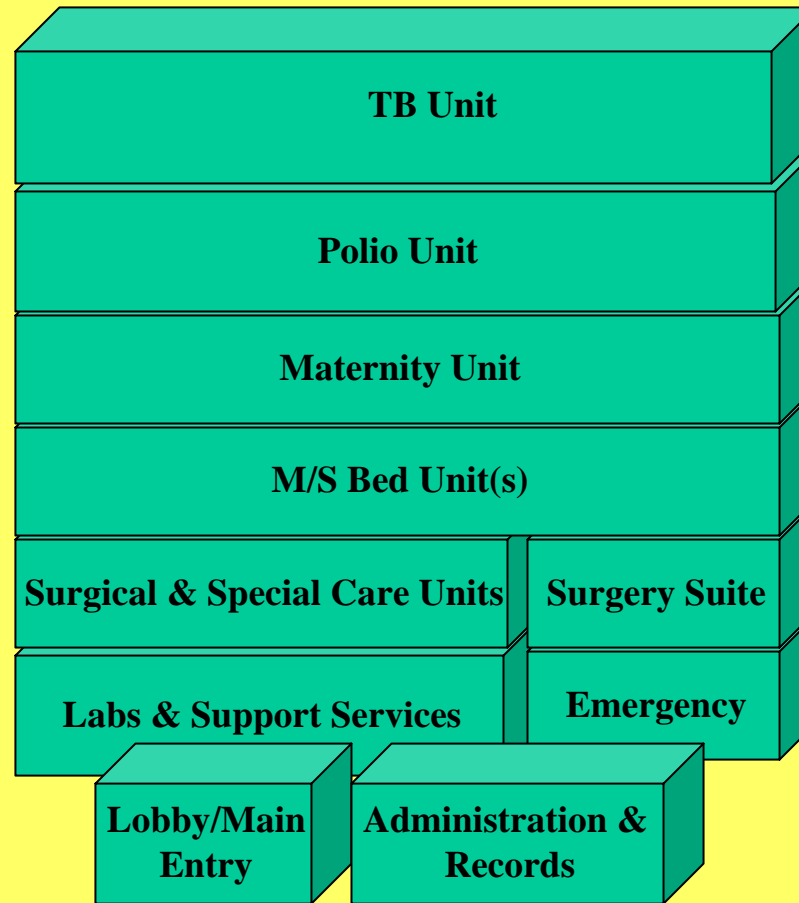
**Albany Medical Center, Albany NY**



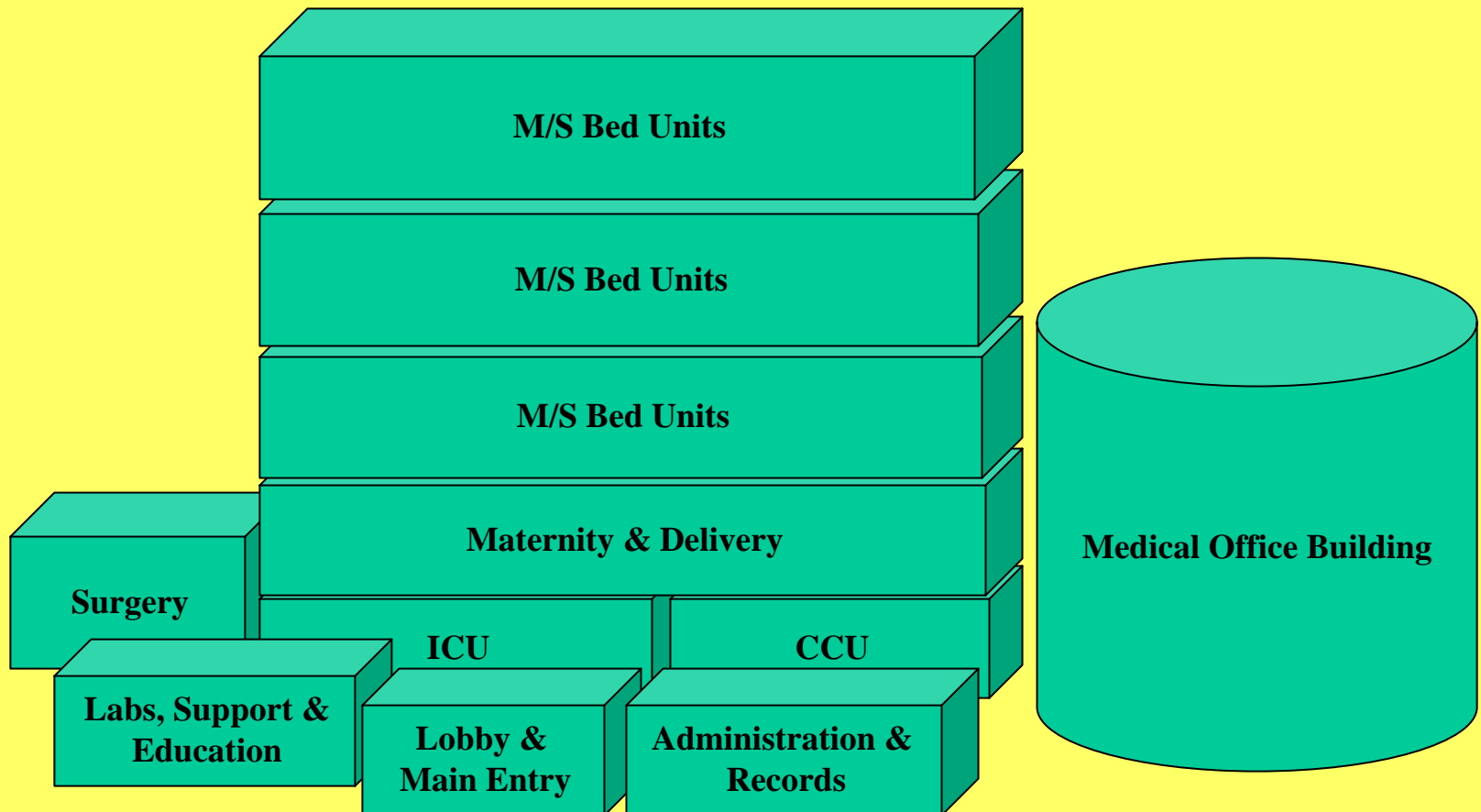
# 1920 Hospital Configuration



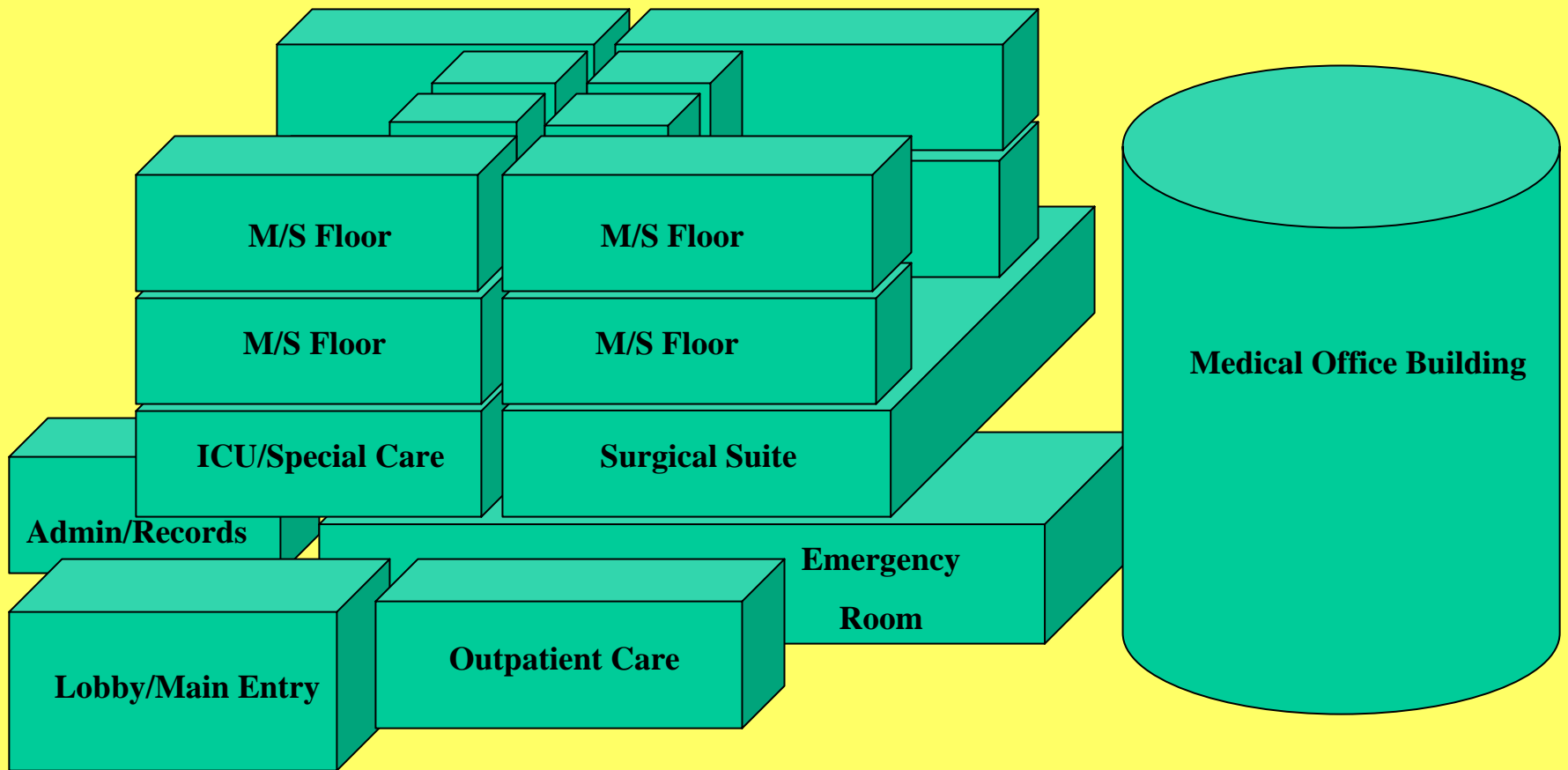
# 1950 Hospital Configuration



# 1975 Hospital Configuration



# 2005 Hospital Configuration

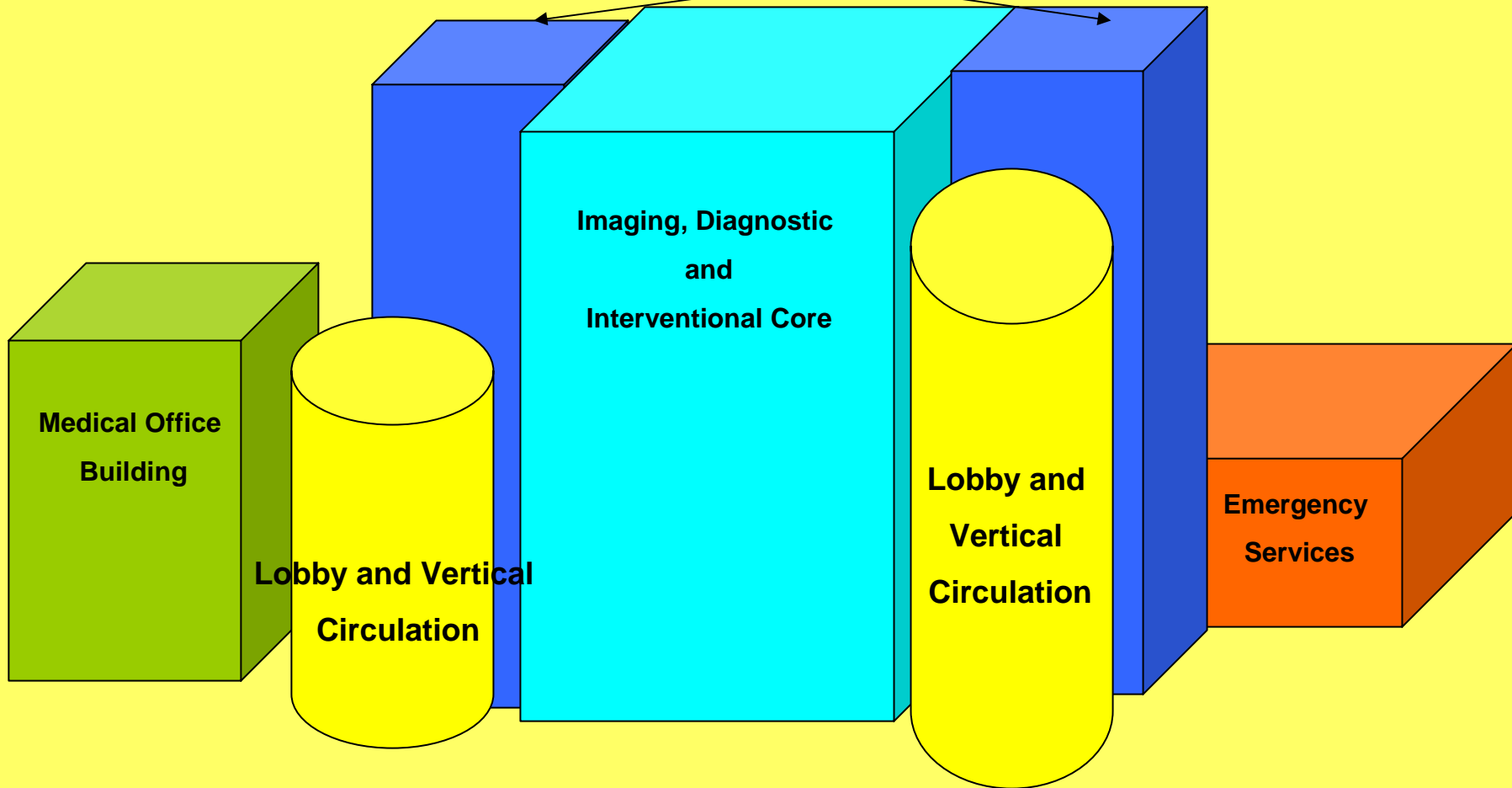


# **HOSPITALS in the FUTURE**

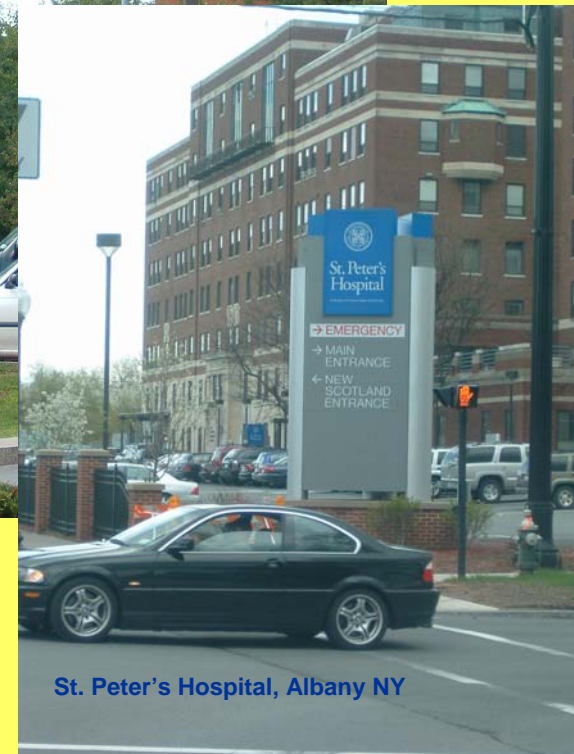
- **How many beds will we need?**
  - Population growing
  - Outpatient modalities continue to increase
  - Public Good Services
  - Definition of Capacity
- **Is Decentralization the future of technology?**
  - Miniaturization of diagnostics and equipment
  - Digital Technology & Communications
- **Regulatory Landscape – Physicians as Competitors**

# Hospital of the Future

Variable Acuity Patient Rooms in Vertical Modules



# Functional Evolution will impact design...



- **Emergency Room is new “front door”**

# Increased emphasis on flexibility...

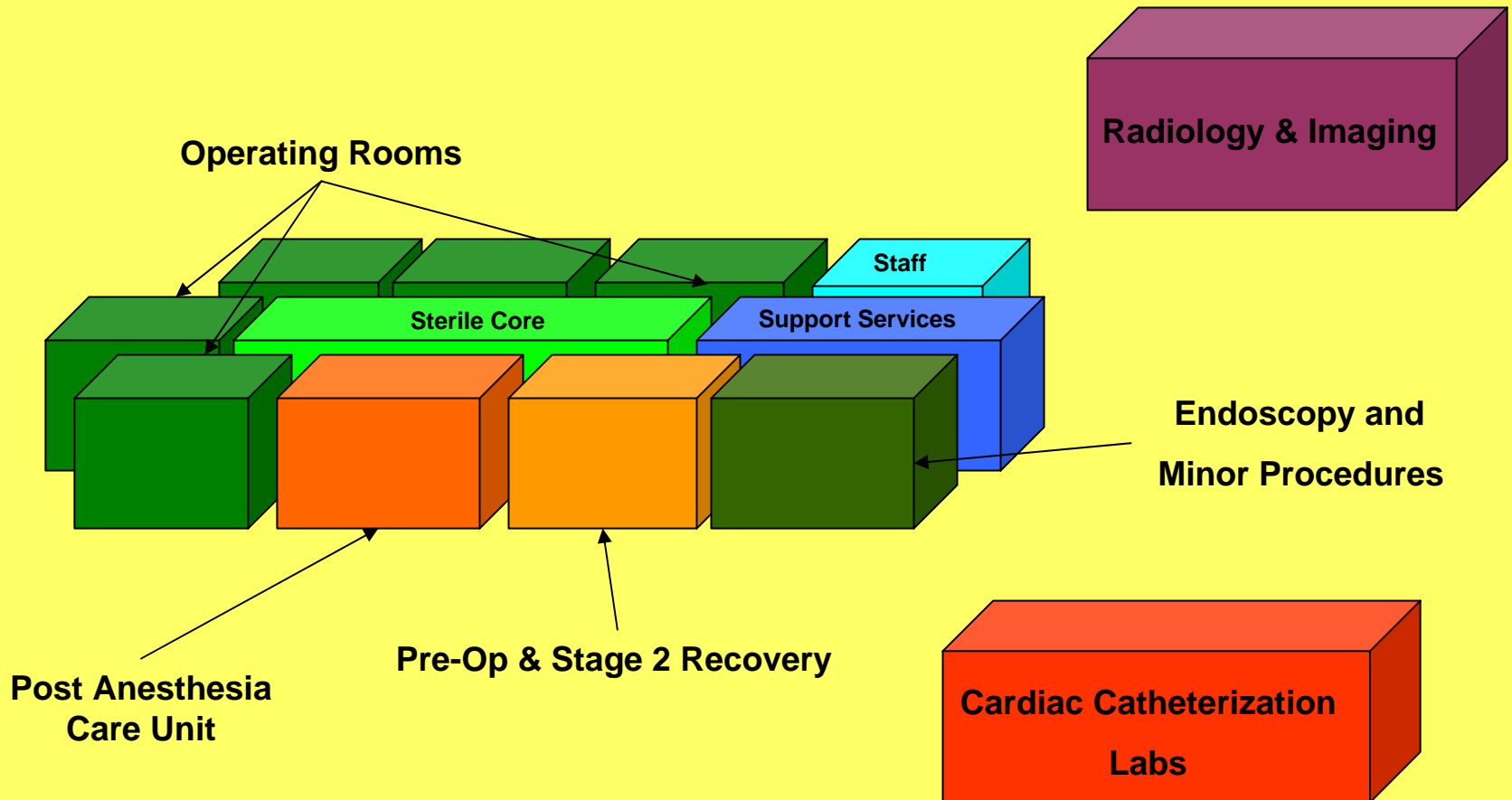
- **Universal Interventional Rooms**
  - **Surgery**
  - **Minor Procedures**
  - **Catheterization**
  - **Minimally Invasive**



GE CT Scanner



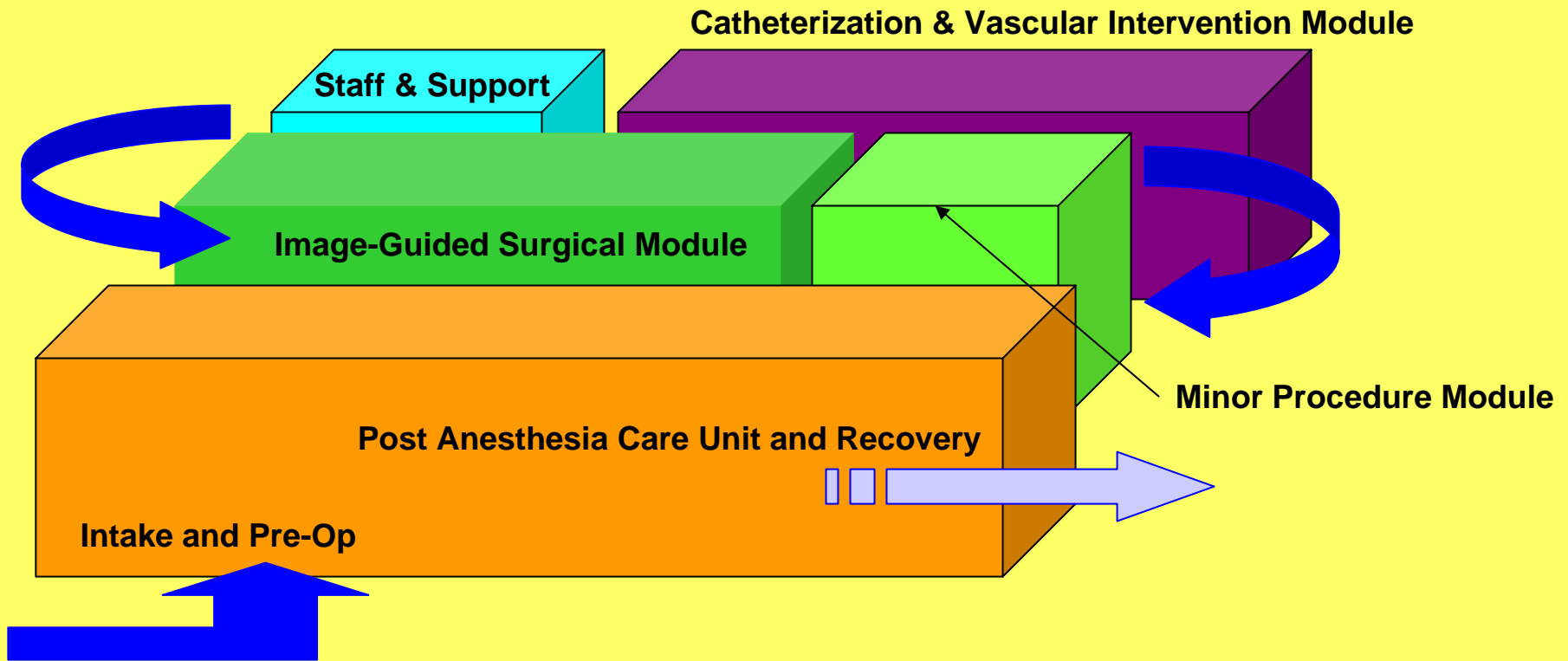
# Today's Surgical Suite



# **Facilitate operational efficiencies...**

- Combining Pre- and Post-Op...**
- Combine Radiology and Surgery...**
- Patient Care “pods” should be adjacent**
  - Interchangeable**
  - Allow “flexing” to accommodate fluctuations in demand**
- Centralize interventional suites vs scattered approach**

# Tomorrow's Surgical Suite



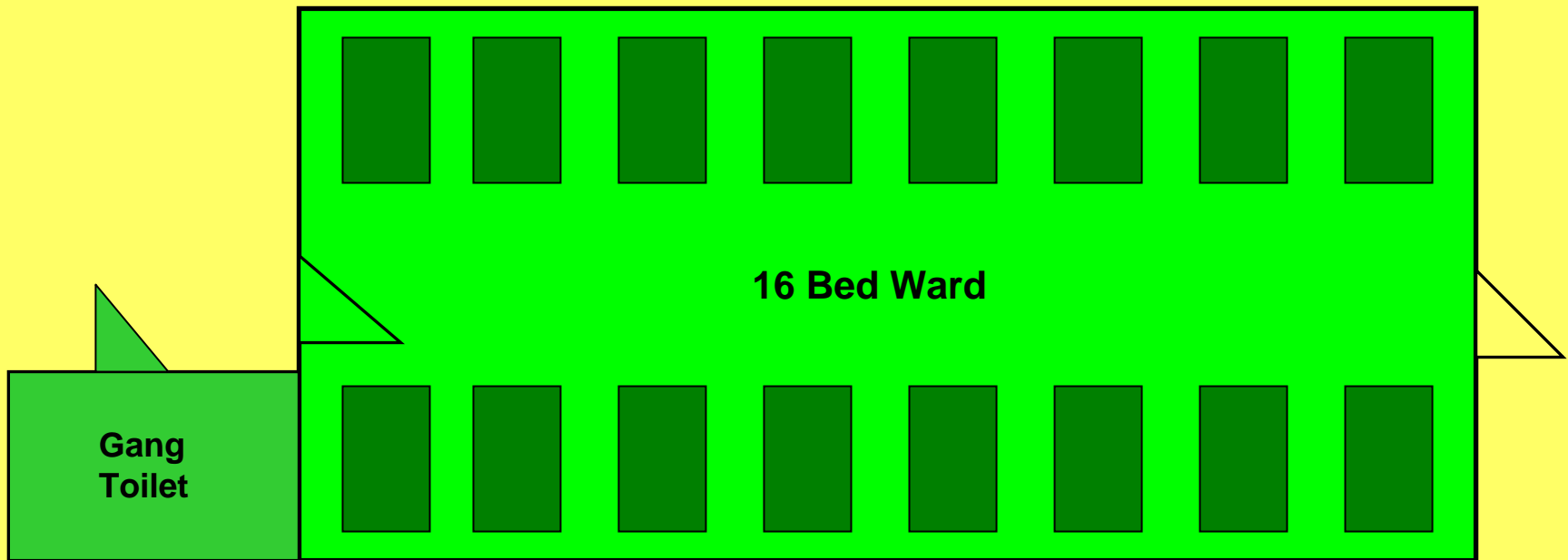
## **Also structural design...**

- **Separate “Structure” from “Utilities”**
  - **“...capital investment needs to be focused on flexibility, interoperability and technology as opposed to ‘bricks and mortar’...”**
  - **Source: Healthcare Reform Working Group – 11/18/04**
- **“Demountable” partitions?**

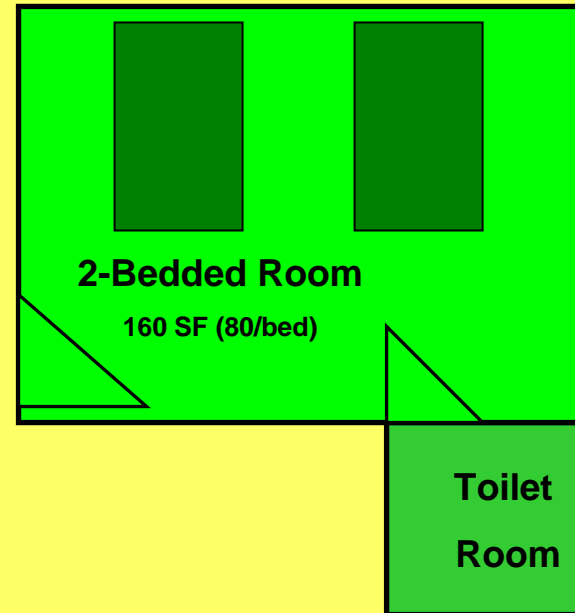
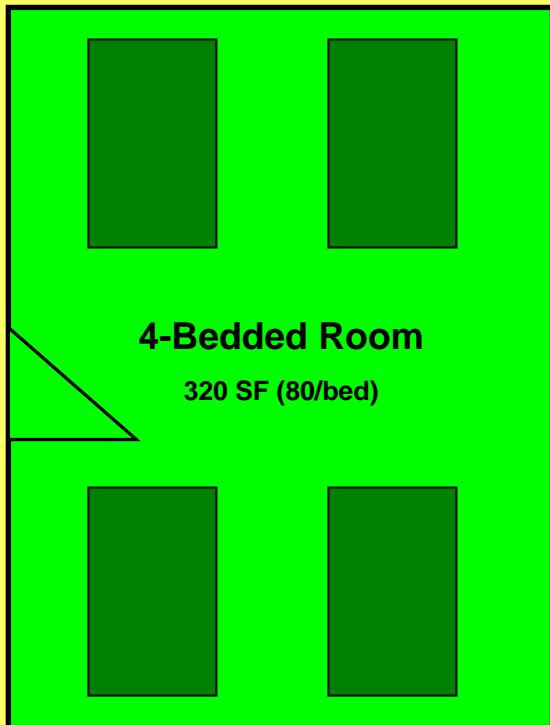
# ....and equipment....

- **Medical Equipment**
- **Lights and partitions**
  - **Hospitals want to use them...but perhaps not own them (Lease?)**

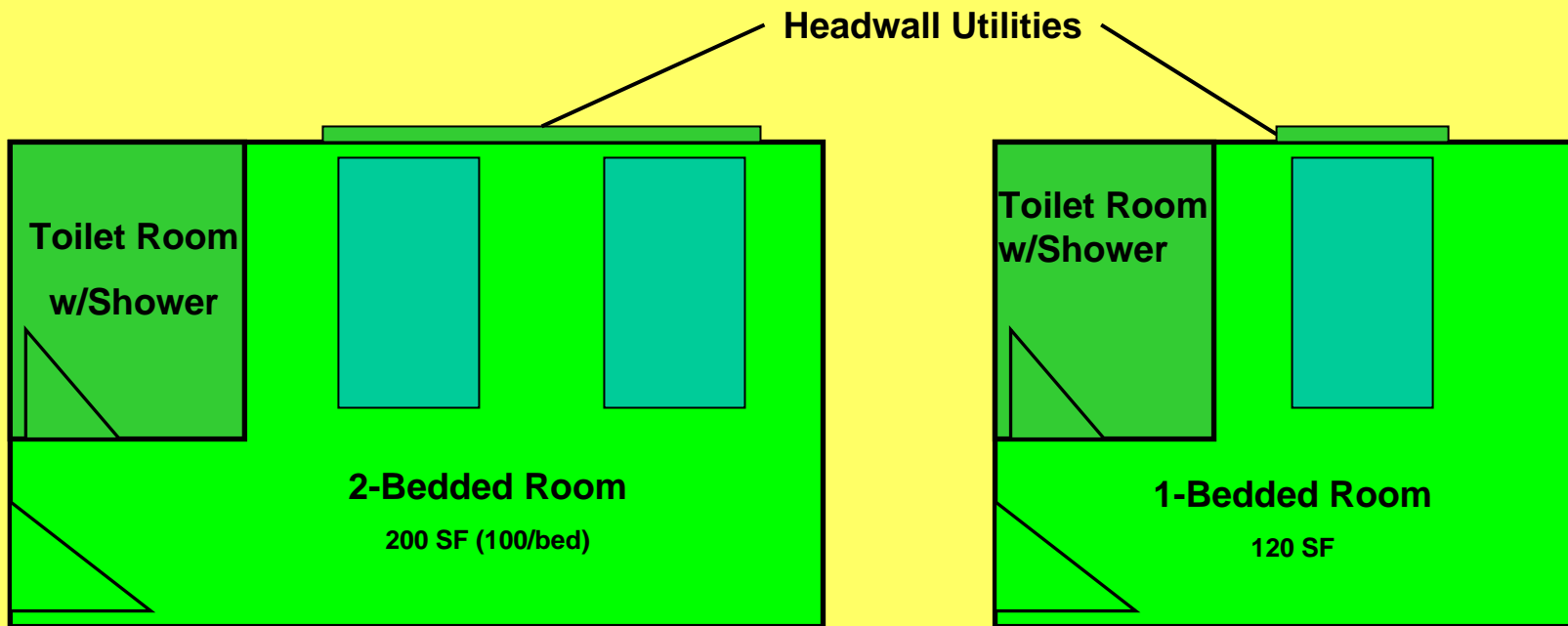
# 1920's Hospital Ward



# 1950's Hospital Rooms



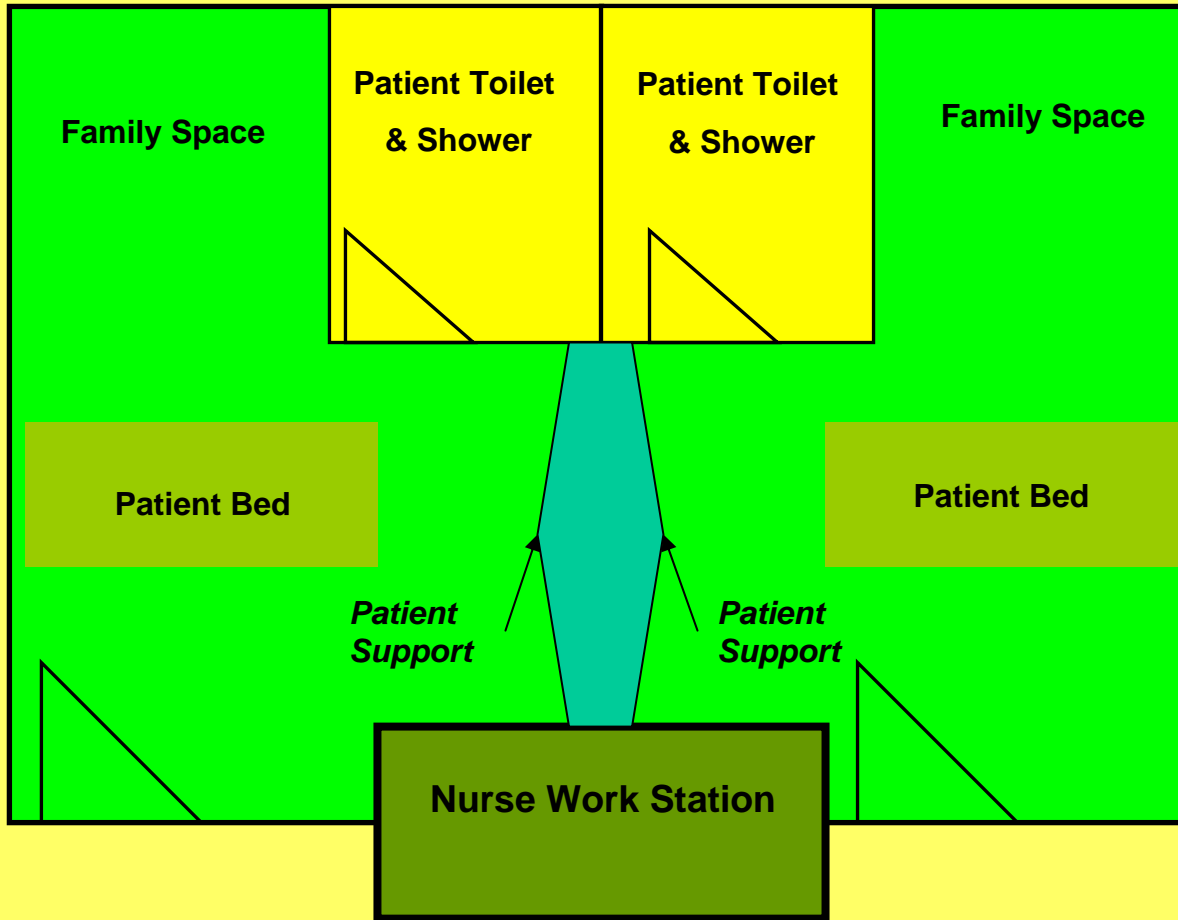
# 1970's Hospital Rooms





# Hospital Room of the Future

## *Variable Acuity Rooms*



# Digital Integration

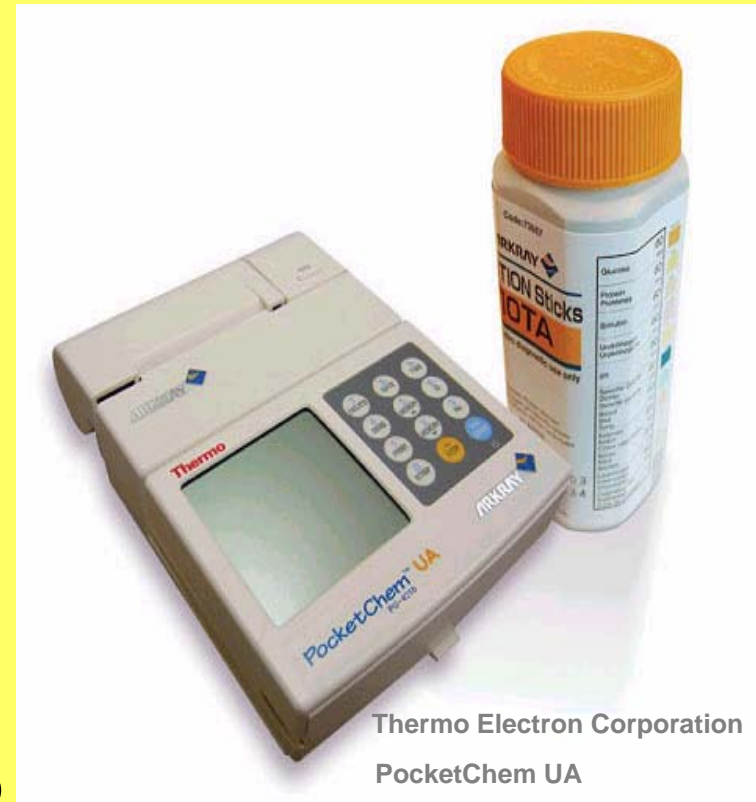
- **Digital Systems and Information Technology**
  - Integrate across continuum of care
  - Clinical-Administrative-Financial
  - Interoperability with Physicians



Raytheon Company EPTS

# Anti-”silo” Technology....

- **The Digital Hospital...**
  - **Point of Care: Lab Work & Vitals**
- **Clinical Programs and Functional Systems will likely replace Department Organization.....**
- **Capital Access is Critical to Success**



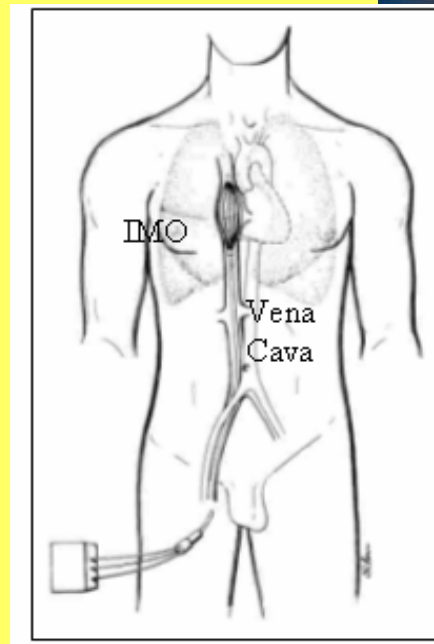
Thermo Electron Corporation  
PocketChem UA

# Implant Technology

- Ventricular assist devices for hearts
- Artificial lungs (short-term pulmonary support)
- Bioactive bone cements



Ventracor Cardiac Assist System



Source: National Tissue Engineering Center

# New Hospital Models....

- **Critical Access**
- **LTACH**
- **Freestanding  
Emergency Rooms**
- **Mobile Services**

Mobile Cardiac Catheterization



Mobile Medical International Corporation

# Reserve Capacity: Care Capability

- **Planning for Care**
- **Flexibility in bed capacity.**

Source: Texas A&M University College of Architecture, Texas A&M University System Health Science Center, Office of Homeland Security

