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Big Ideas for Small Facilities: Innovations in Rural Hospital Design

November 12, 2019

Amy Douma, HGA

The American Institute of Architects

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Big Ideas for Small Facilities: Innovations in Rural Hospital Design

November 12, 2019
Moderated by: Yvonne Nagy

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Case Study Series

As part of the Academy's multi-channel, on-line approach, these sessions provide emerging and experienced professionals with convenient and economical opportunities to develop their chosen area of interest.

The **Case Study Series** is intended to introduce members of healthcare-centric practices, in all stages of professional development, to case studies of relevant content, providing access to data and critical analysis of elements critical to the project's success.

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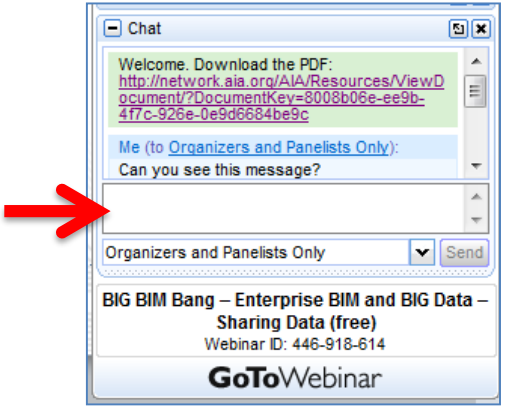

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Amy Douma

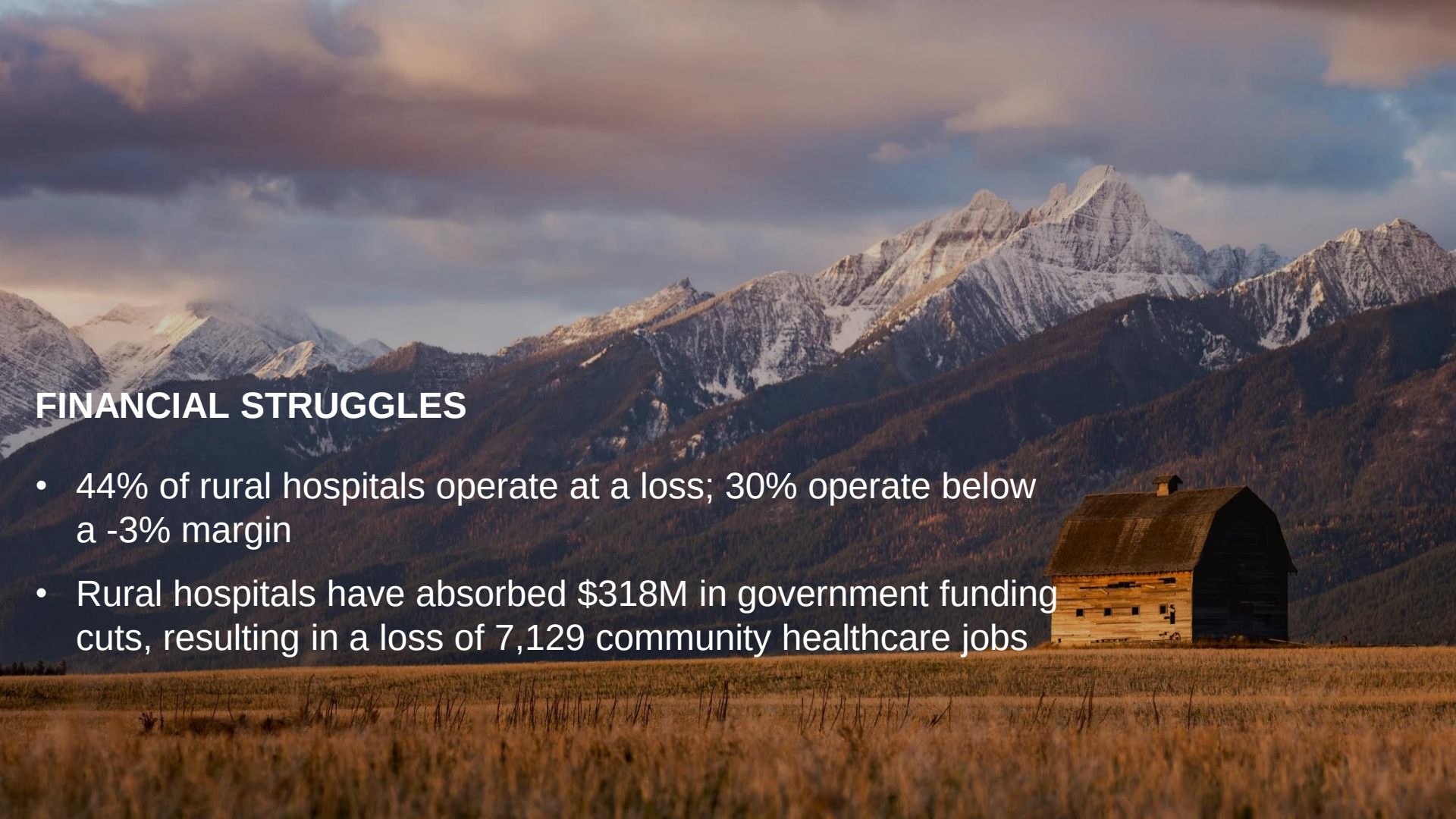
Kara Freihoefer

Virginia Riffle

AGENDA

- Challenges of Rural Care
- Innovation Case Studies
- Implementation Challenges & Tools
- Questions / Discussion

CHALLENGES OF RURAL CARE



FINANCIAL STRUGGLES

- 44% of rural hospitals operate at a loss; 30% operate below a -3% margin
- Rural hospitals have absorbed $318M in government funding cuts, resulting in a loss of 7,129 community healthcare jobs

WORKFORCE SHORTAGES

- 77% of rural U.S. counties are designated as Health Professional Shortage Areas
- Nearly 30% of rural PCPs are at or nearing retirement age; practitioners under 40 account for 20% of workforce
- Only 11% of physicians practice in rural America; 8400 additional PCPs are needed

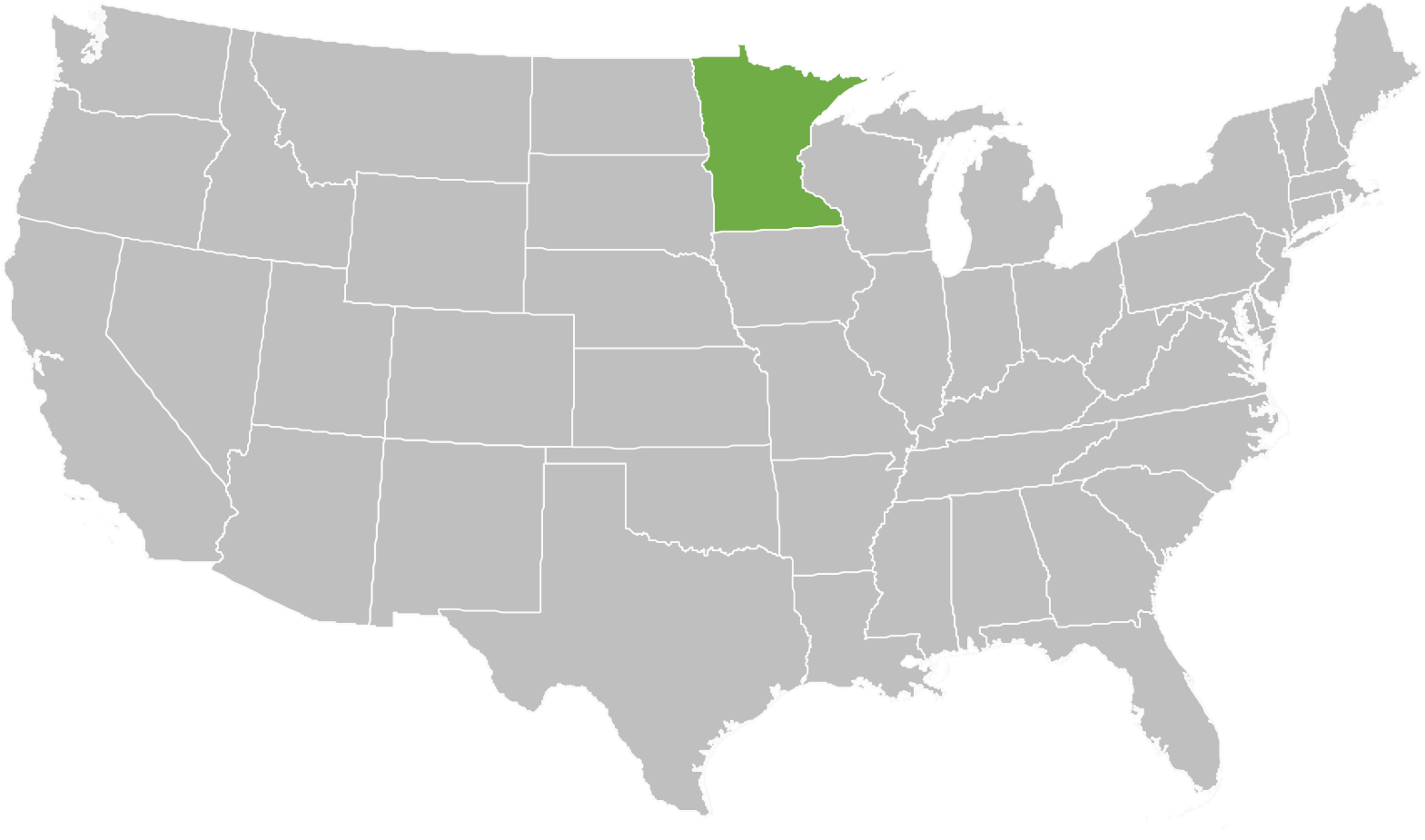
Results: Access Challenges

- Rural Americans comprise 16% of the population, but reside in 95% of the U.S. land area
- In an emergency, rural patients travel twice as far as urban patients; 60% of trauma deaths occur in rural America
- Over 1/3 of rural hospitals considered vulnerable or in danger of closing

Results: Design Implications

- Necessity to leverage resources
- Highly unpredictable volumes
- Creative problem solving & spirit of collaboration

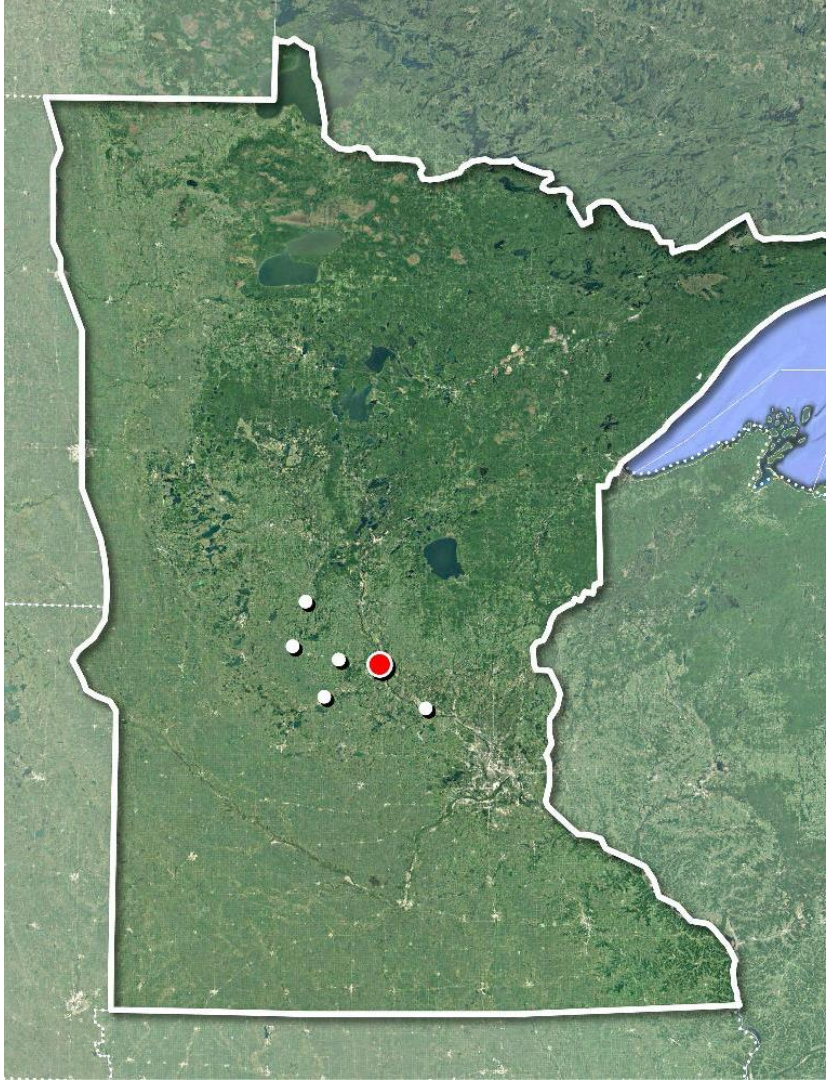
INNOVATION CASE STUDIES



CentraCare Health System

CentraCare Health System

- Largest healthcare provider in central Minnesota
- Central hub campus with five Critical Access Hospitals

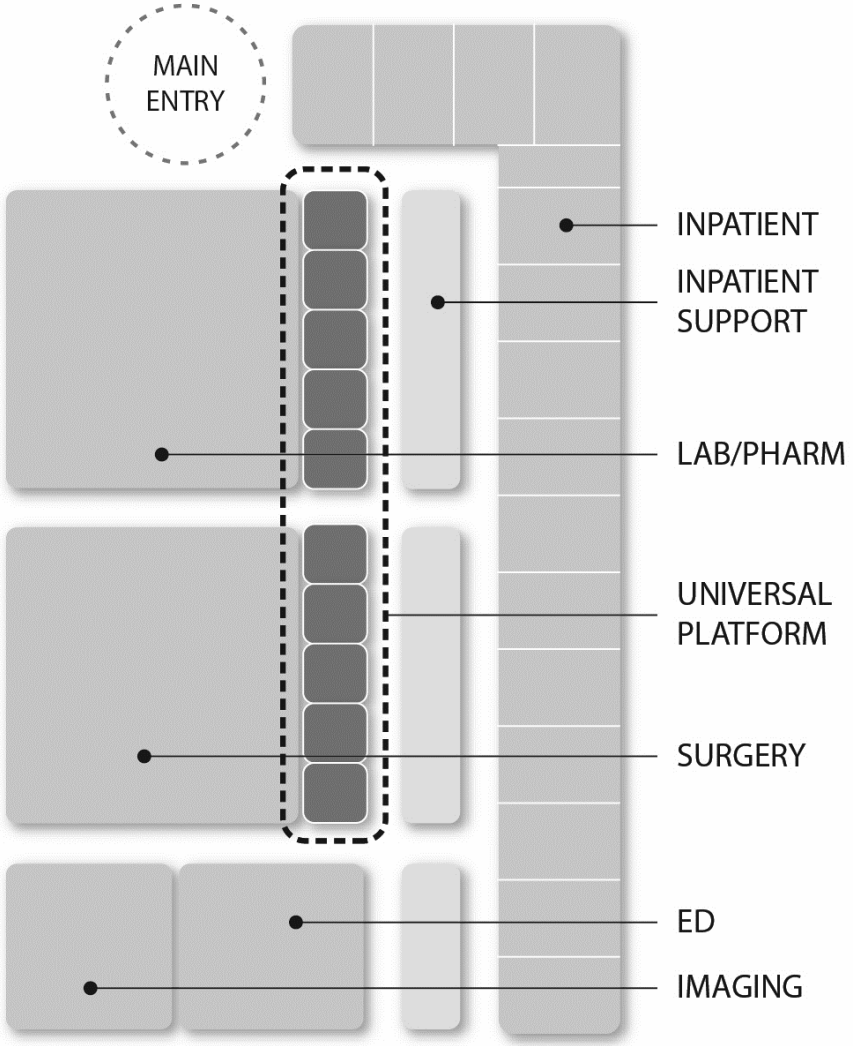


Challenges

- Financial, staffing – efficiency
- Long-term flexibility to respond to changing demographics and market pressures

Universal Care Platform

- Group of flexible rooms that serves multiple departments
- Departments with different peak volumes share space



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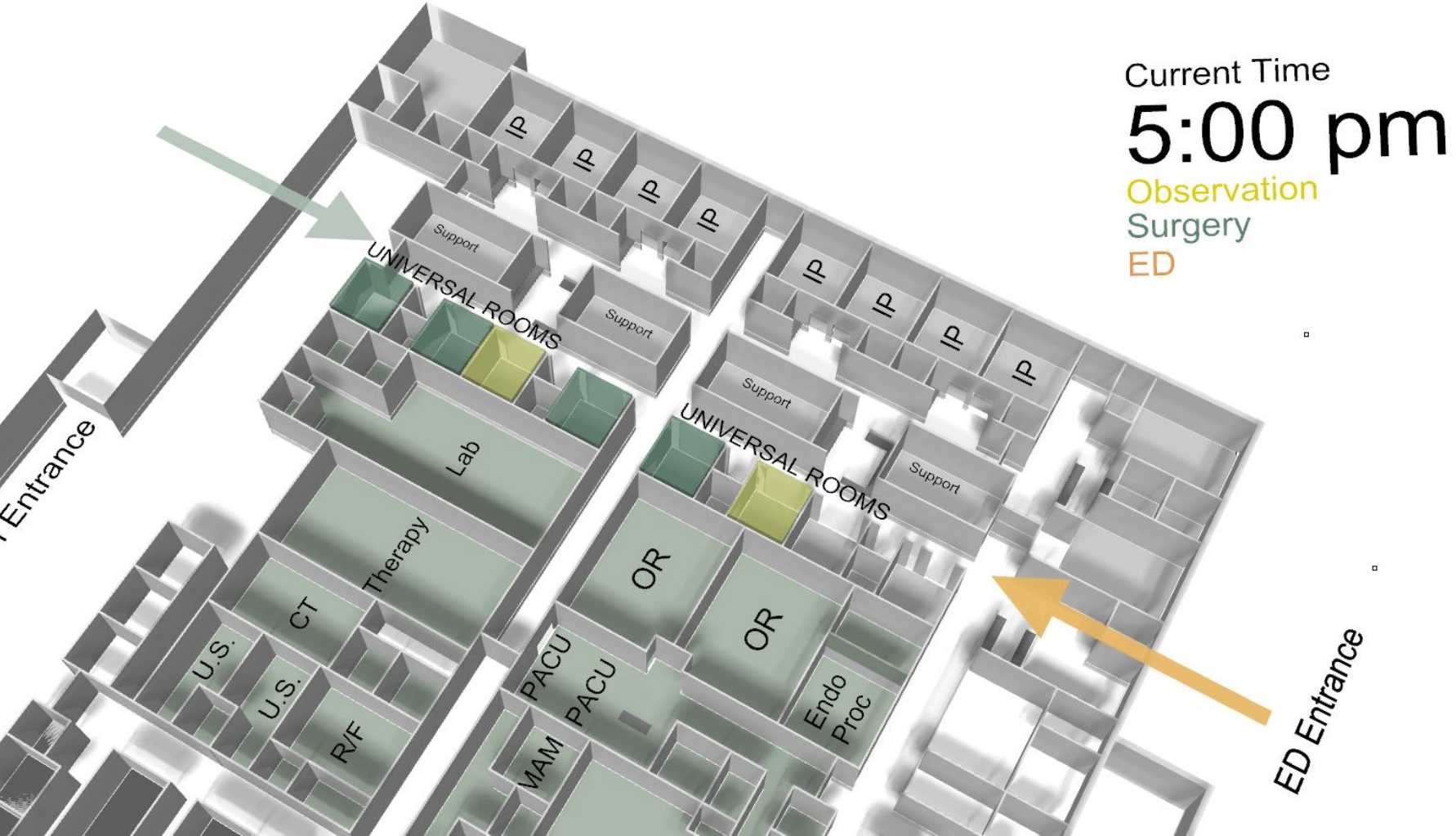
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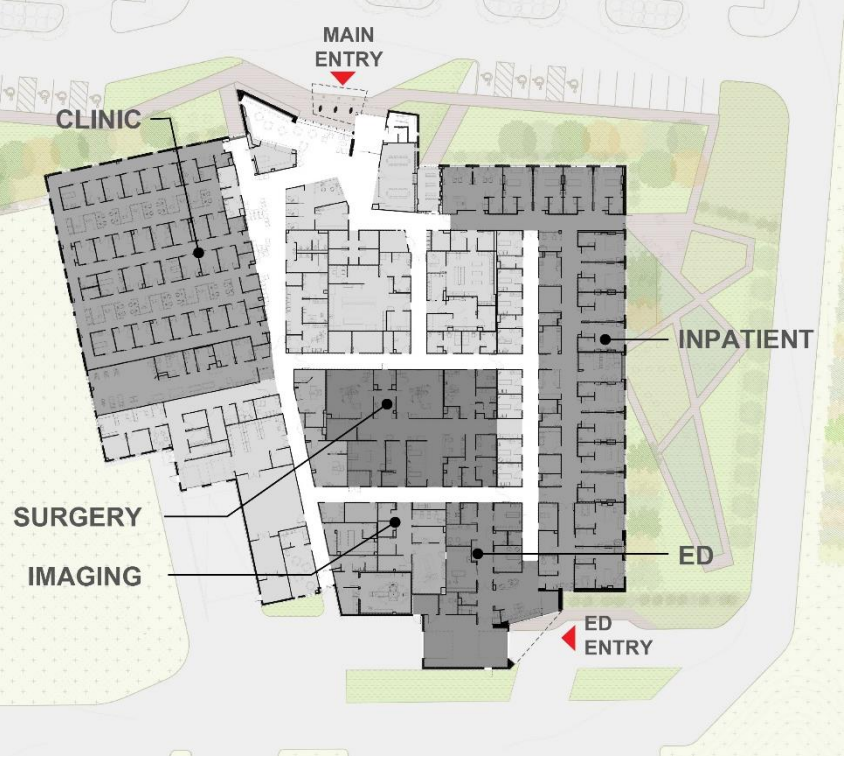
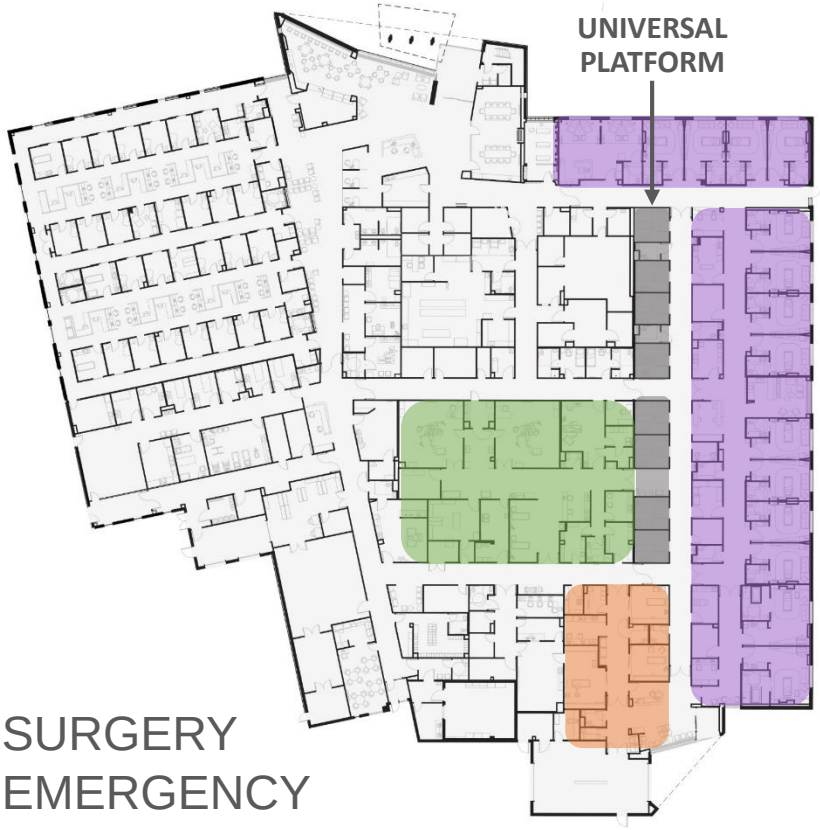


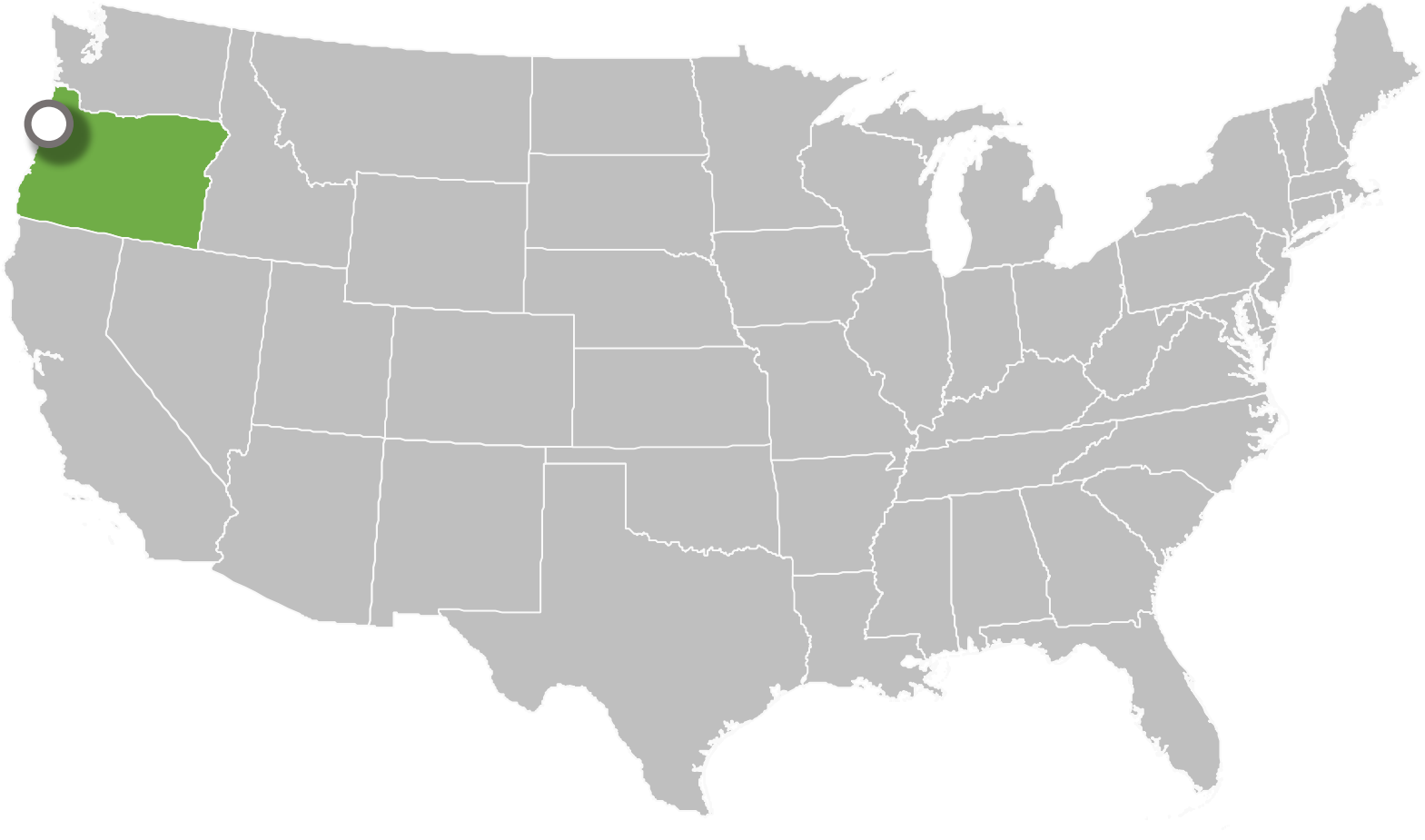


- SURGERY
- EMERGENCY
- OBSERVATION
- INPATIENT

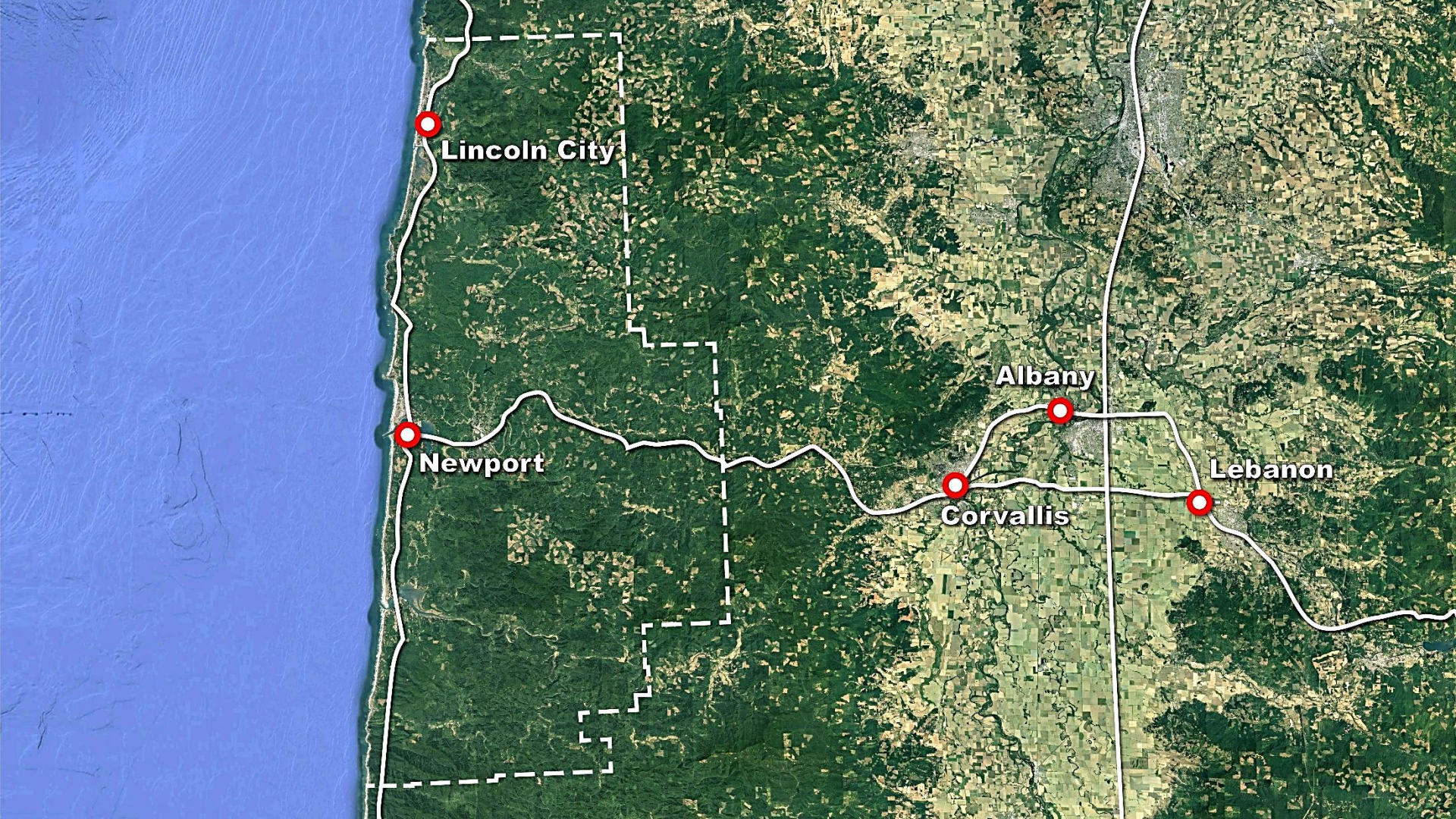
LONG PRAIRIE

Results

- Flexible space for daily volume spikes, long-term service line shifts
- Staffing flexibility – cross-trained to serve variety of patient types as needed from central location
- Cost-savings – reduction of 2500 sf, $1M in construction costs alone



Samaritan Health Services

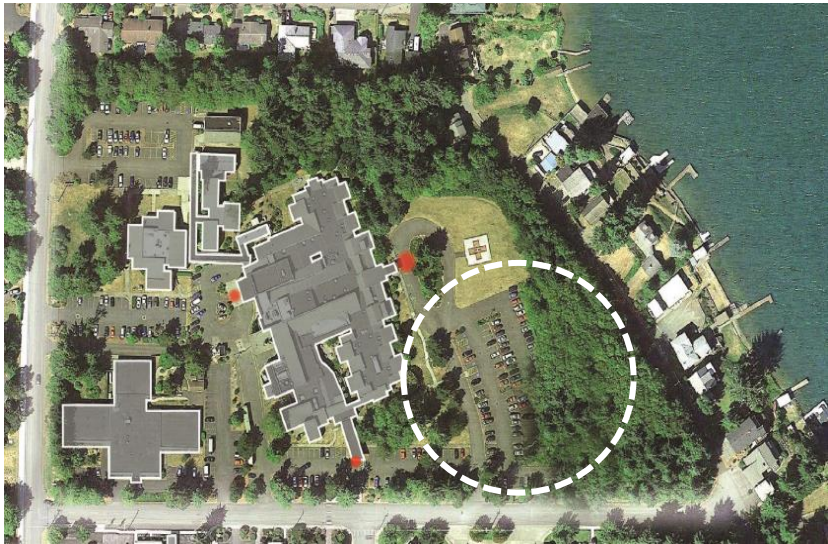

Lincoln City
Albany
Newport
Lebanon
Corvallis

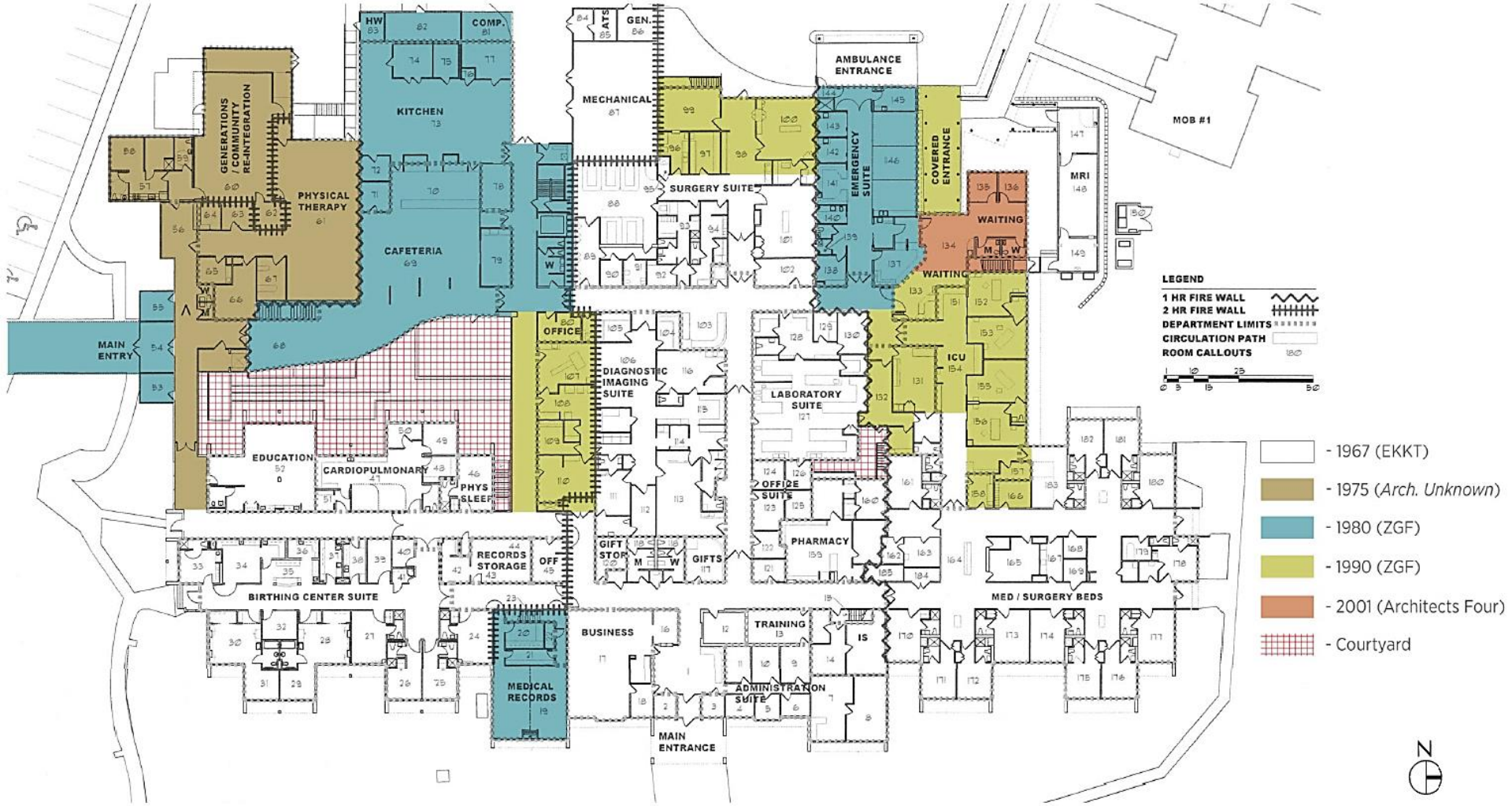
Context: Lincoln County

- 38% of household have resident 65 years of age or over
- 18% have some form of disability
- 49% of households earn less than basic cost of living for state
- Health Professional Shortage Area
- Ranked 34th of 36 counties in 2018 health outcomes

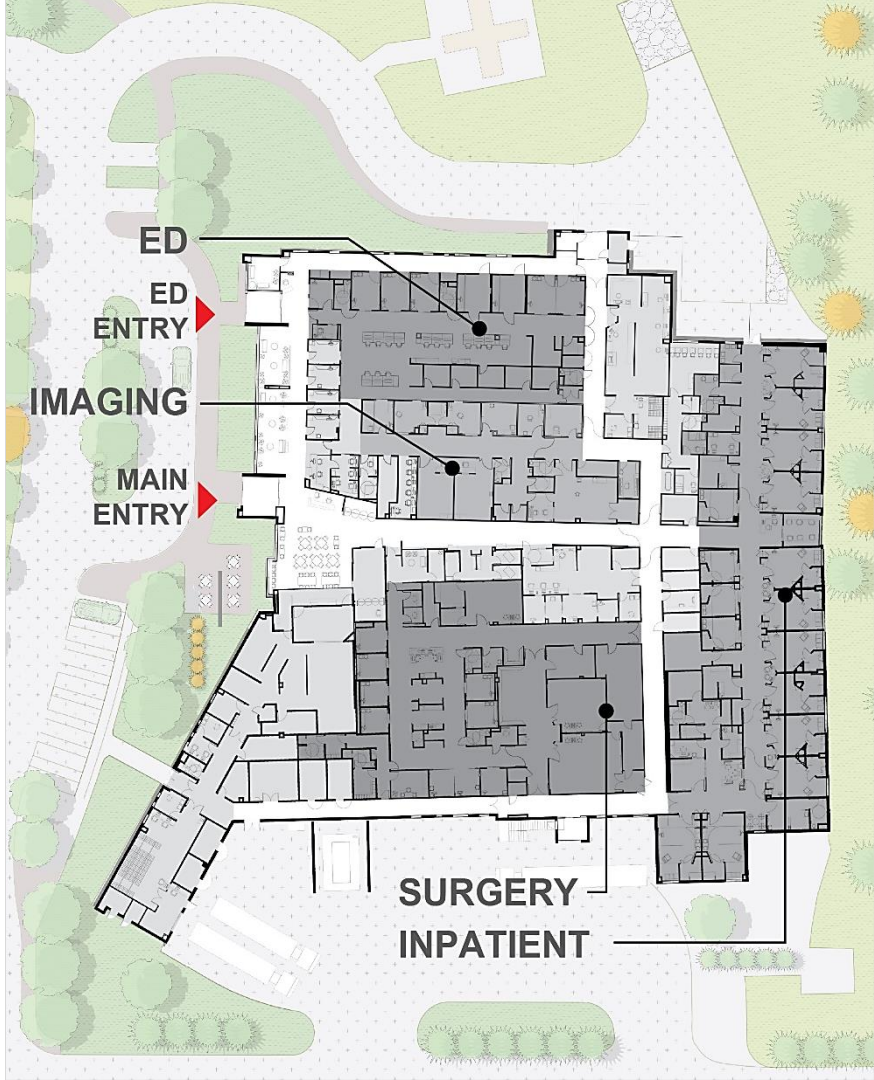
Original Hospital

- Majority of construction from 1967
- Wood construction
- Many infrastructure issues
- Inefficient operations due to incremental expansion




HW
COMP.
ATS
GEN.
AMBULANCE ENTRANCE
MECHANICAL
KITCHEN
GENERATIONS / COMMUNITY / RE-INTEGRATION
PHYSICAL THERAPY
CAFETERIA
SURGERY SUITE
EMERGENCY SUITE
COVERED ENTRANCE
MOB #1
MRI
WAITING
WAITING
MAIN ENTRY
OFFICE
DIAGNOSTIC IMAGING SUITE
ICU
LABORATORY SUITE
EDUCATION
CARDIOPULMONARY
PHYS SLEEP
OFFICE SUITE
PHARMACY
RECORDS STORAGE
OFF
GIFT STOR
GIFTS
BIRTHING CENTER SUITE
MED / SURGERY BEDS
BUSINESS
TRAINING
IS
MEDICAL RECORDS
ADMINISTRATION SUITE
MAIN ENTRANCE
LEGEND
1 HR FIRE WALL
2 HR FIRE WALL
DEPARTMENT LIMITS
CIRCULATION PATH
ROOM CALLOUTS
- 1967 (EKKT)
- 1975 (Arch. Unknown)
- 1980 (ZGF)
- 1990 (ZGF)
- 2001 (Architects Four)
- Courtyard
N

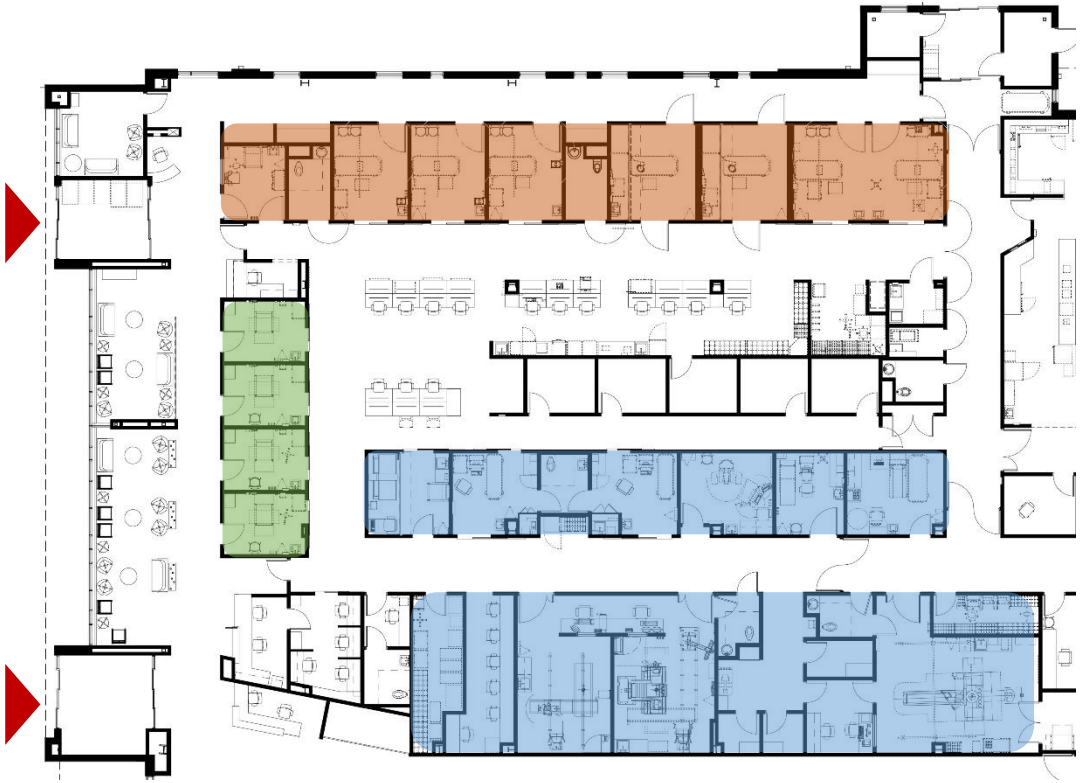
EMERGENCY
IMAGING
OUTPATIENT SERVICES
INPATIENT
SURGERY
PHARMACY
Samaritan
Health Services
INFORMATION
INFORMATION
SURGERY


ED
ED ENTRY
IMAGING
MAIN ENTRY
SURGERY
INPATIENT

- Convenient location for lab draws, surgical consults, etc.
- Staff come to patients
- Adjacent to Main Entry

Outpatient Services

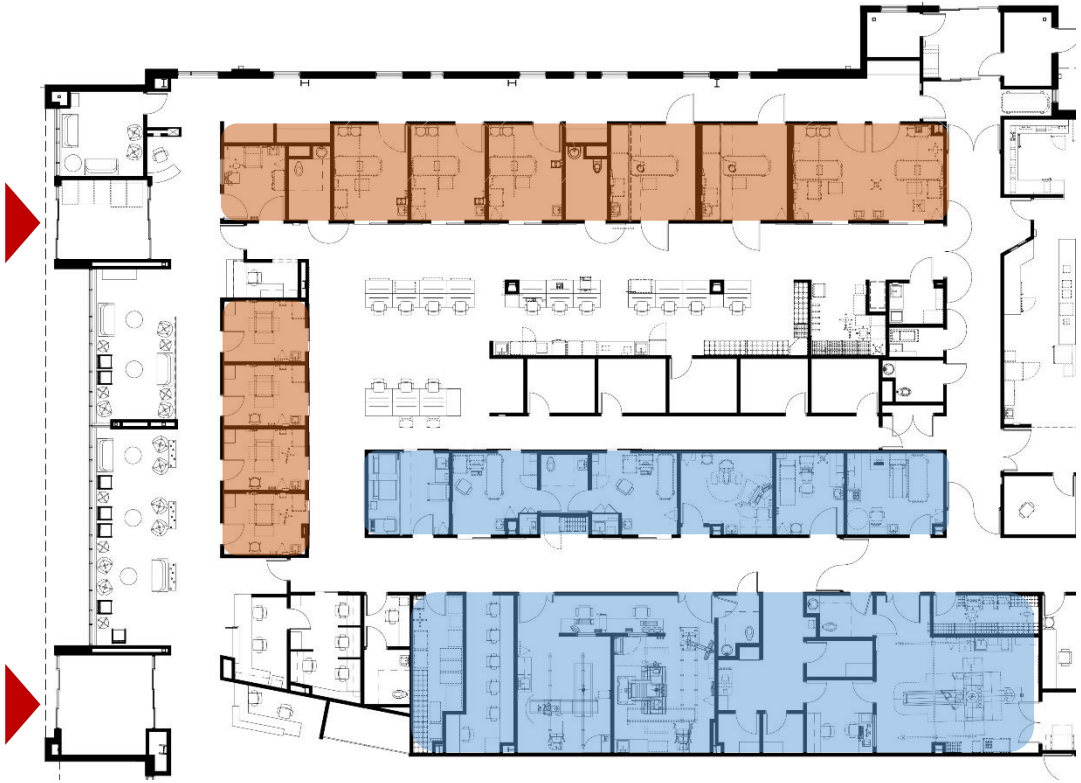
- ED surge accommodated by unusual flexibility between departments



EMERGENCY
OUTPATIENT SERVICES
IMAGING

ED Flexibility

- ED surge accommodated by unusual flexibility between departments
- Outpatient Services rooms convert to ED treatment



EMERGENCY
OUTPATIENT SERVICES
IMAGING

ED Flexibility

- ED surge accommodated by unusual flexibility between departments
- Ultrasound and DEXA convert in case of ED surge
- Creates on-stage / off-stage Emergency Department

EMERGENCY
OUTPATIENT SERVICES
IMAGING

ED Flexibility

DAY – TYPICAL

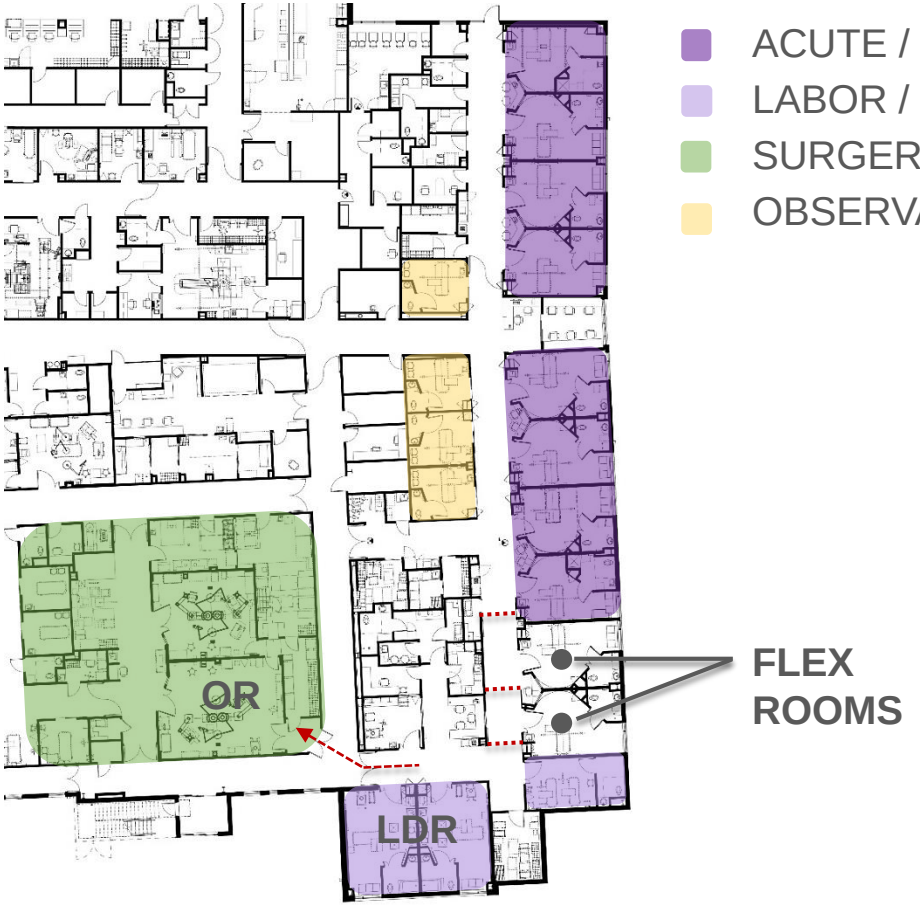
EVENING – TYPICAL

ED SURGE

- Number of ED treatment spaces doubles from 7 to 14 – seamlessly

ED Flexibility

- Flex rooms serve Acute Care / CCU & Labor / Delivery (Post-partum)
- Immediate access from LDR to OR
- Inpatient staff monitor Observation Unit



Inpatient Flexibility

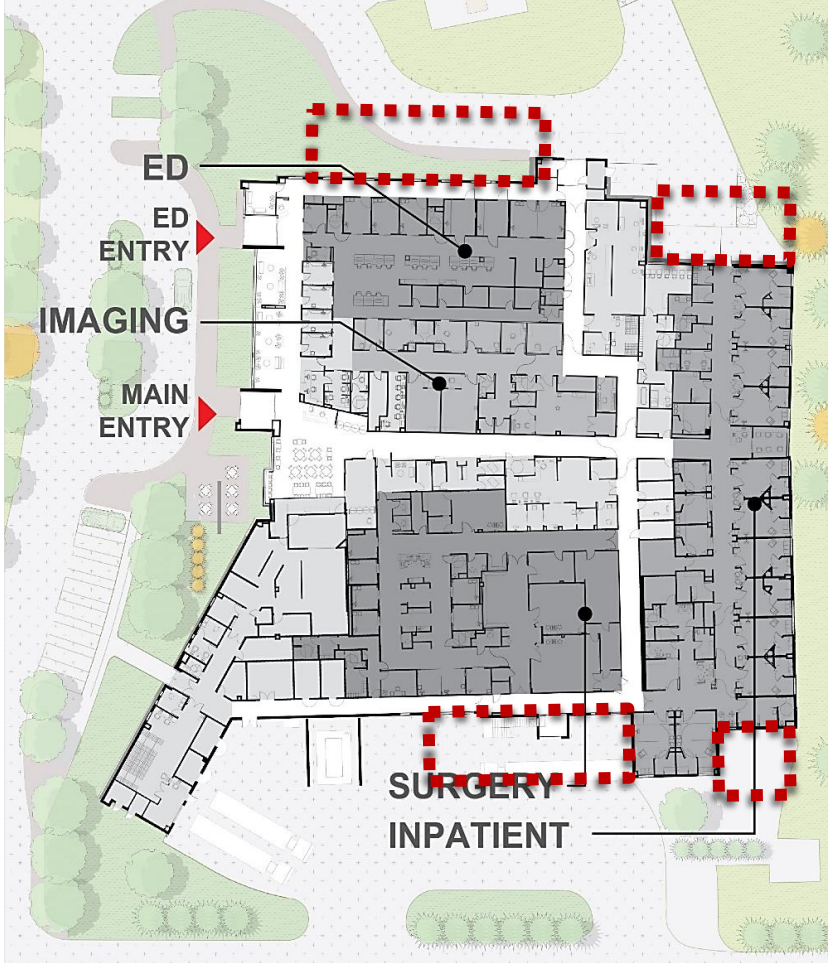
- Gift shop is kiosk that expands into public space when open

Public Spaces

- Dining doubles as lobby seating
- Conference room acts as dining overflow

Public Spaces

- Potential growth departments (ED, Surgery, Inpatient) configured for future expansion



Future Growth

Results

- Flexible space for daily volume spikes, long-term service line shifts
- Cost-savings – $1M in construction costs alone; additional equipment and operational savings

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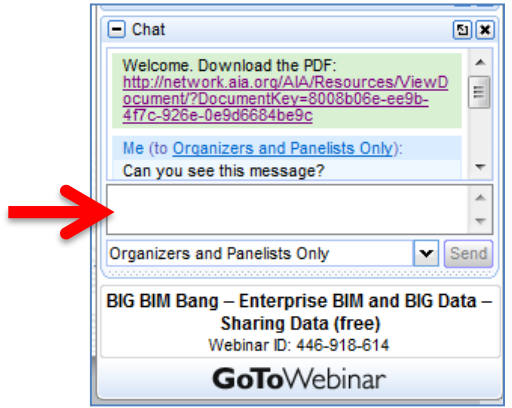
Question Reminder

Submit your questions and comments via the chat box.

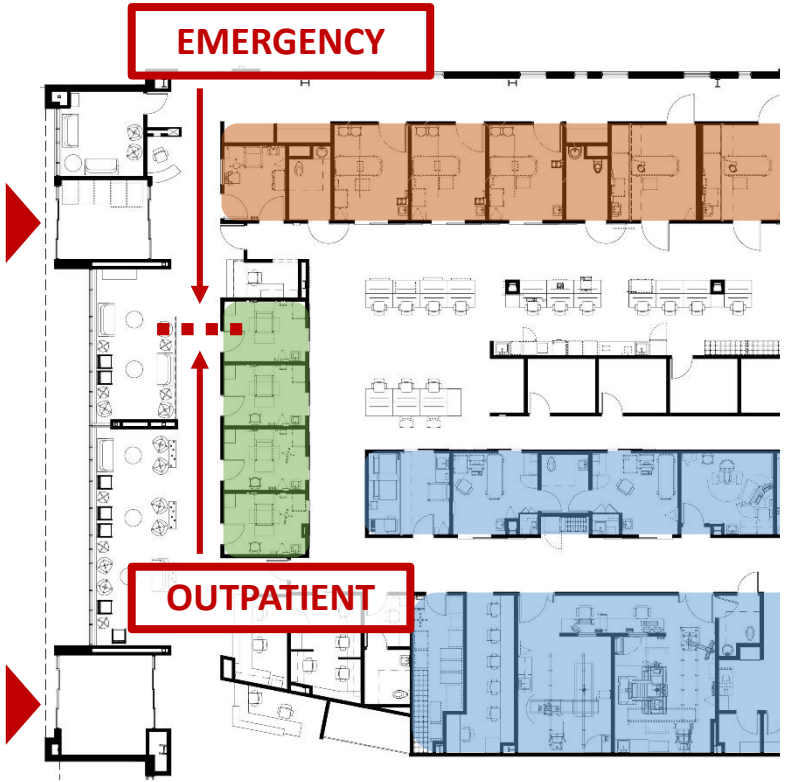


IMPLEMENTATION CHALLENGES & TOOLS

Challenges

- Code / Regulatory Issues

- EMERGENCY
- OUTPATIENT SERVICES
- IMAGING

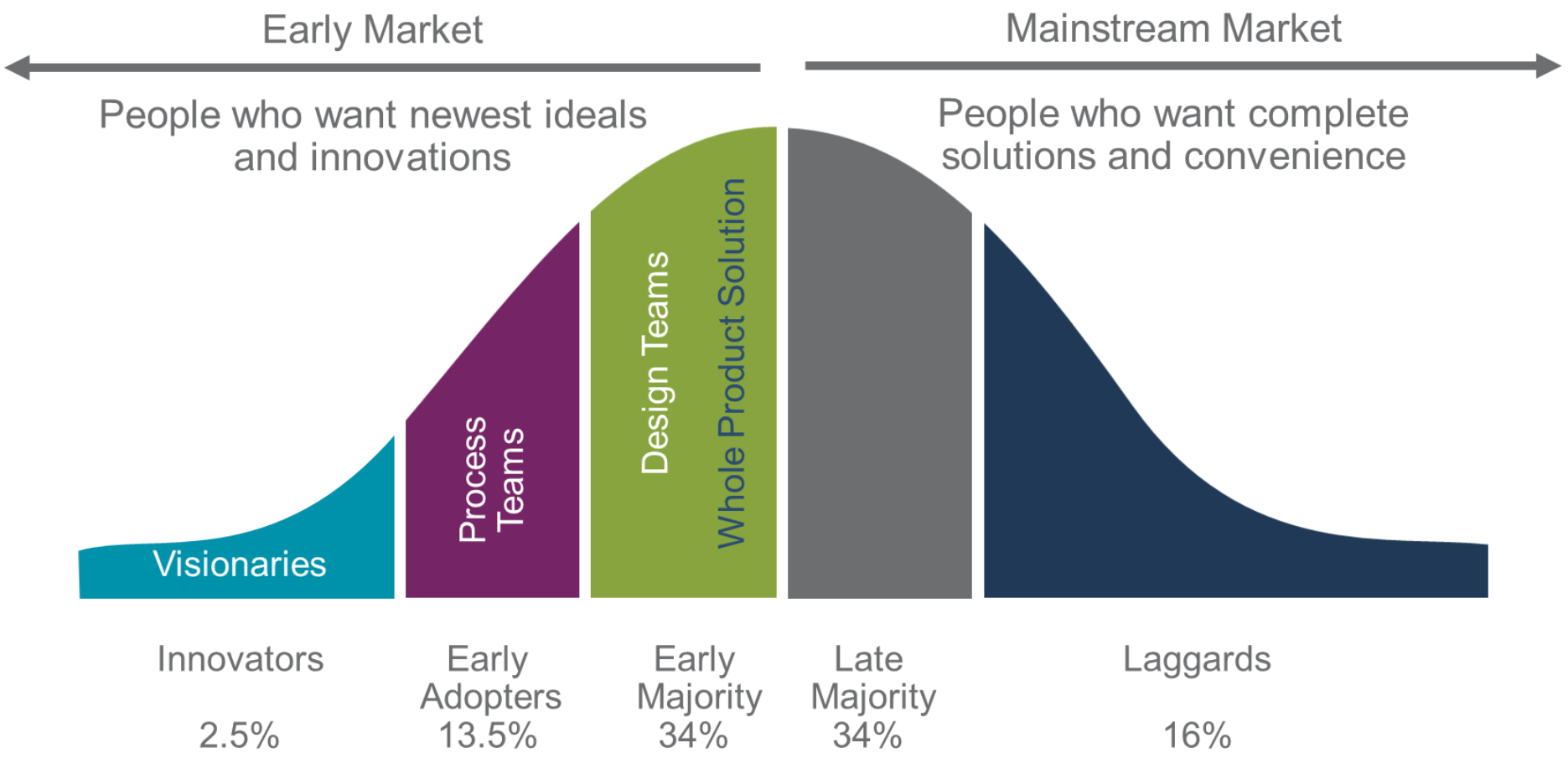


Challenges

- Patient Experience
  - Wayfinding
  - Access to natural light
  - Room designed for multiple acuity levels

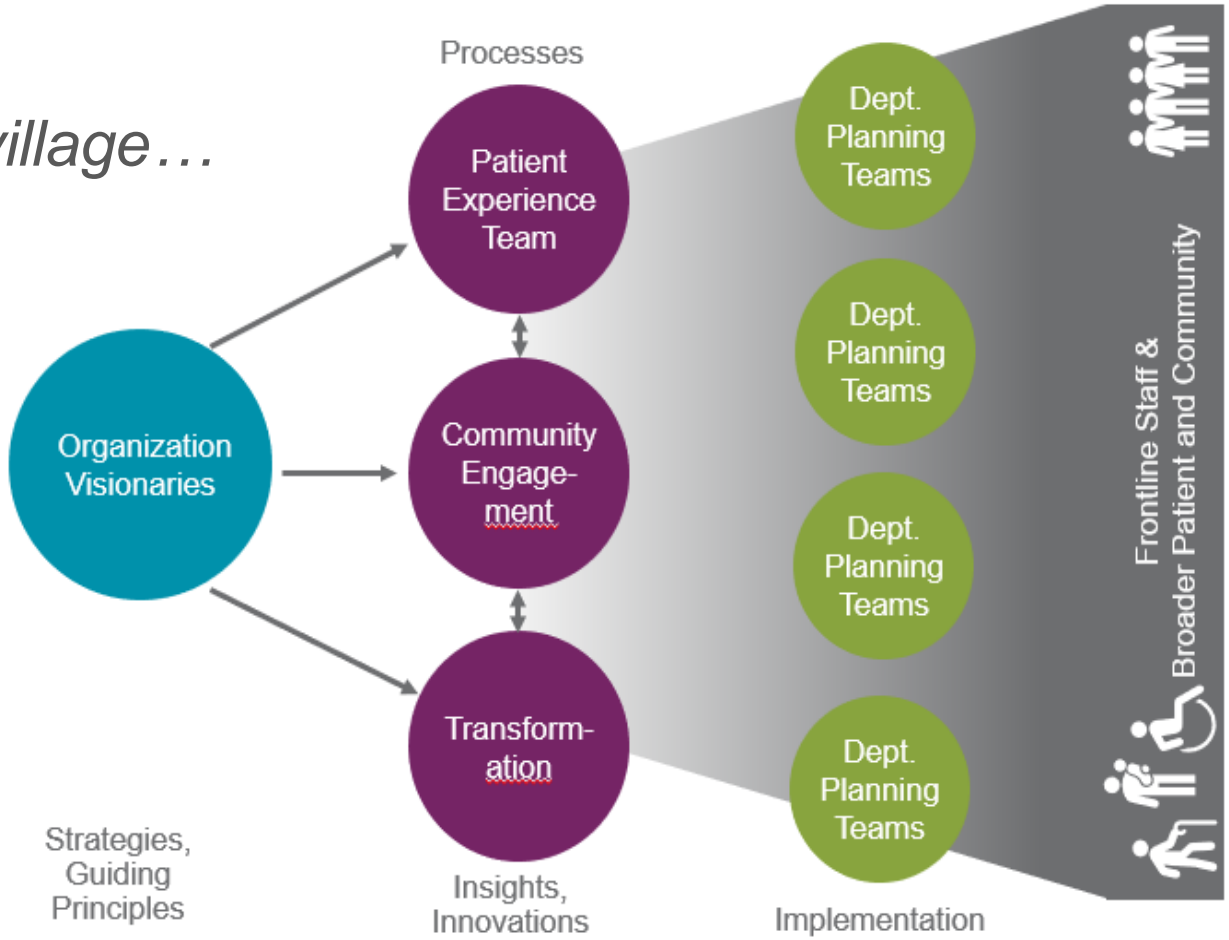
Challenges

- Cultural Silos / Staff Buy-In
  - Role of leadership
  - Building staff support



Process and Tools

It takes a village…

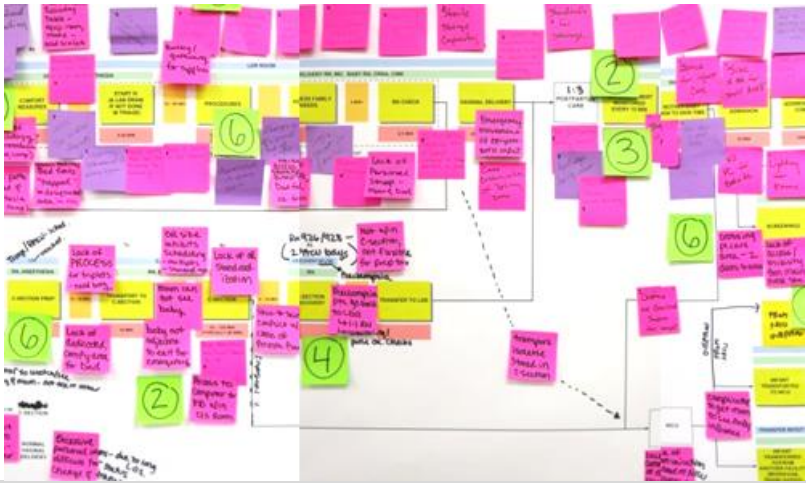


Process and Tools

GEMBA WALKS

Step 1: Engage

- Gain deep understanding of current conditions and challenges



VALUE STREAM MAPS

Step 2: Focus

- Identify consistent themes and priorities for improvement

Step 3: Explore

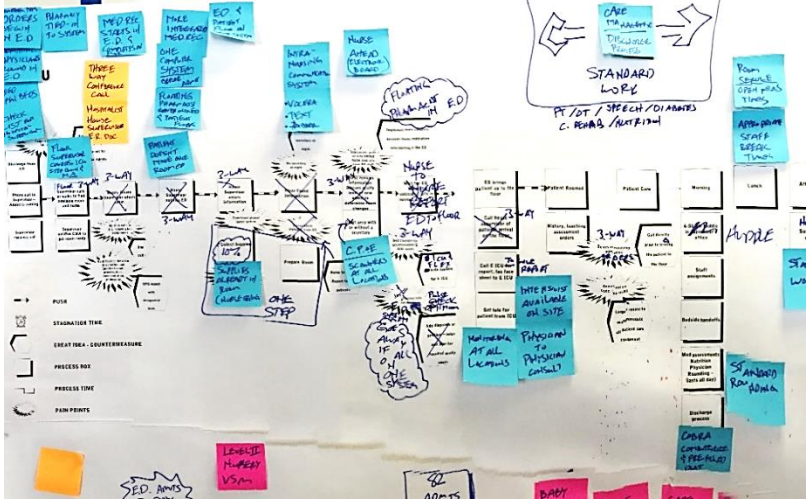
- Brainstorm potential solutions
- Research innovative practices within and outside of industry

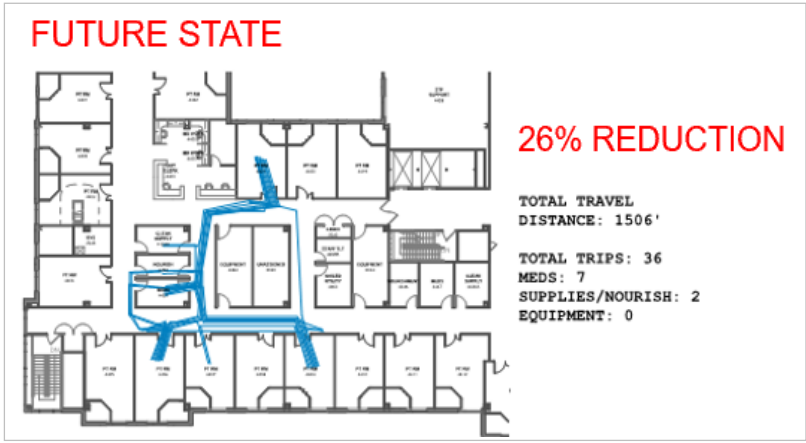
Step 4: Investigate the Details

- Mock up and refine potential solutions
- Identify process changes and staff training needed for successful implementation

Step 5: Apply and Test

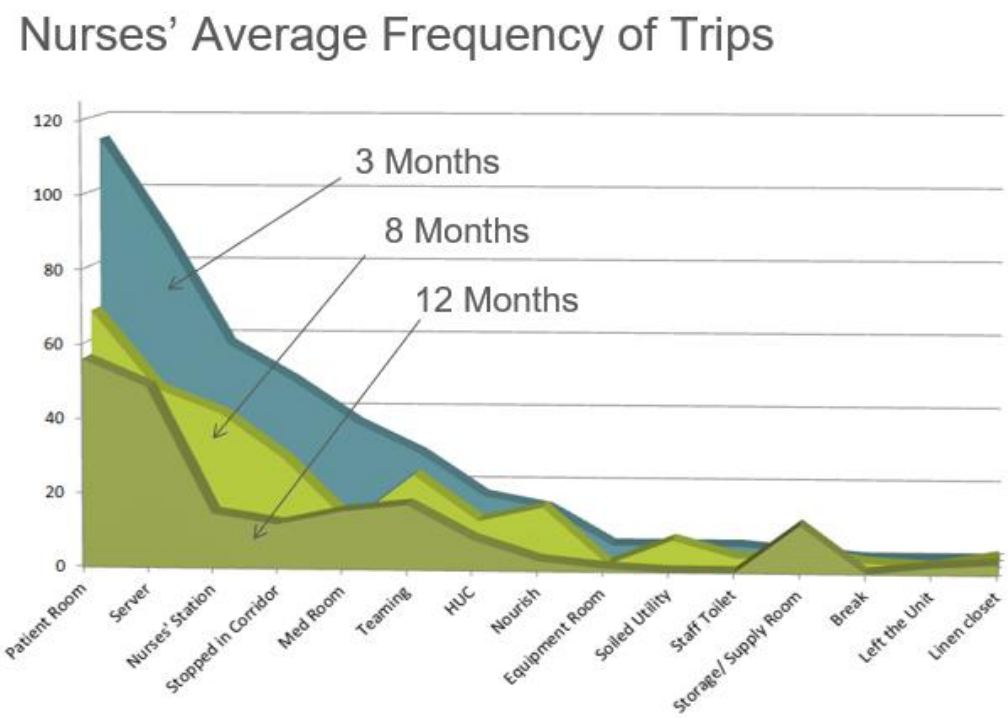
- Pilot process improvements
- Evaluate and refine approaches

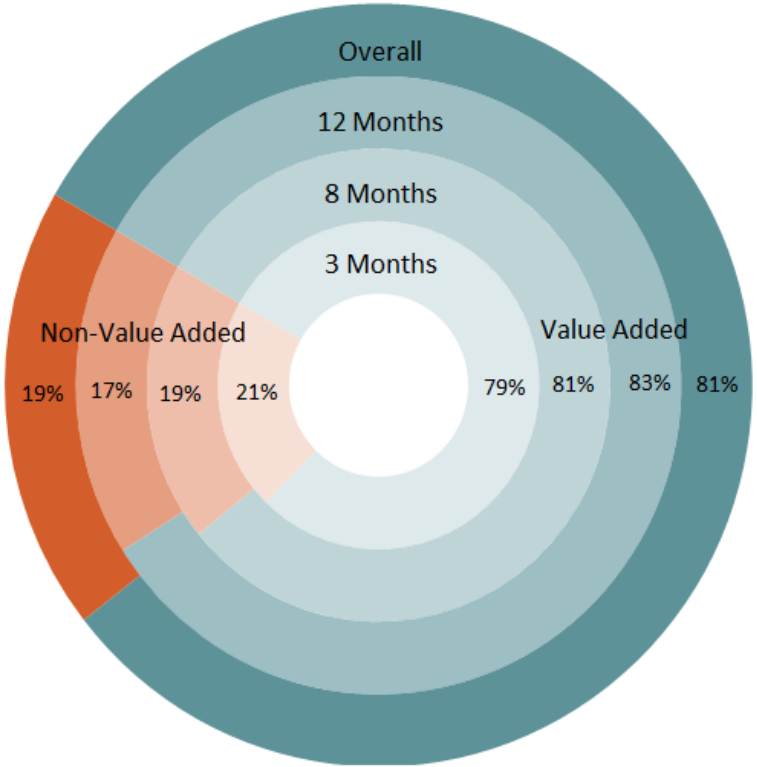




Process and Tools

Post Occupancy Evaluation





Process and Tools

Goal: Culture of Continuous Improvement

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Time for Questions and Comments

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Date	Series	Topic
12.10.19	Master's Studio	End-of-Life Care Environments
02.11.20	Beyond the Basics	The "Not-So-Connected" Building
03.10.20	HC-101	Exam, Procedure, and Operating Rooms: Planning advice based on the FGI Guidelines

Dates & topics are subject to change