ata TELEHEALTH AWARENESS WEEK™

Transforming Healthcare

The Smart Hospital Approach to Digital Health and Systems Thinking

GUTHRIE Artisight EQUUM Medical ACUTE CARE TELEHEALTH

agenda

01
Set the Stage
Welcome & Introductions
Set expectations

02
Meet Guthrie
Implementing Smart Hospital Concepts at Guthrie Clinic

03
The Smart Hospital. Realized
Leveraging state of the art solutions for Operational Efficiency and Enhanced Clinical Outcomes

04
Workforce. Reinvented
Telehealth-enabled workforce solutions across the acute continuum

05
Panel Discussion
Insights and Reflections

06
Closing
Summary of key takeaways and call to action

PANELISTS

Terri Couts, RN-BC, MHA, CHCIO, CDH-E
SVP, Chief Digital Innovation Officer, Guthrie Clinic

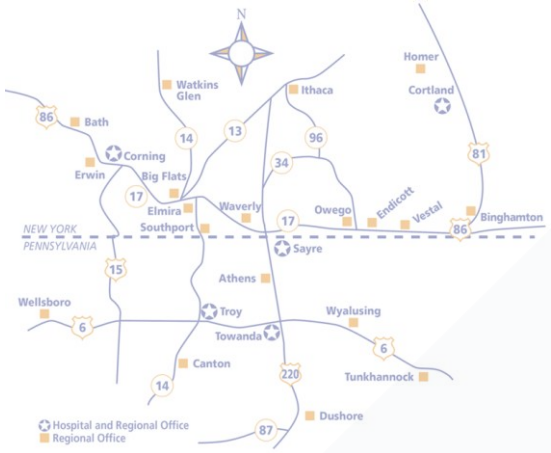
Stephanie Lahr, MD, CHCIO
President, Artisight

Corey Scurlock, MD, MBA
CEO & Founder, Equum Medical

02
Meet Guthrie.

The Guthrie Pulse Center

- Vision
- Design
- Initiatives
- Outcomes
- Future Planning



ALL IN GUTHRIE 2027

The Most Trusted Partner for Healthy Local Communities

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	INCREDIBLE Care	***IN***SPIRED Caregivers	***IN***TENSIFIED Growth	***IN***NOVATIVE Delivery	***IN***VESTMENT in Our Future
	Deliver Exceptional Care and Experience Consistently Across Our System	Be the Best Place to Work and Build a Career	Expand to Meet the Evolving Needs of Those We Serve	Implement New Models of Care to Improve Access	Promote Healthcare Affordability and Operational Efficiency
Initiatives	Define next generation patient journeys Create transformational playbooks for quality and safety Improve efficiency of clinical operations across the system Develop platform model with corresponding policies and procedures to enable a unified "Guthrie system"	Create an unrivaled caregiver experience Build talent pipelines informed by detailed workforce needs assessment Strengthen educational training programs Deploy retention and development program for all employees	Assess and prioritize geographically tailored growth strategies Ambulatory growth: Expand presence across our region Service line growth: Develop Centers of Excellence Service line growth: Develop clinical partnerships	Develop omnichannel care models tailored to our community Redesign care team operating models Shift care out of the hospital and into the home Expand remote caregiver workforce Embed technology platforms to enable innovation	Define and achieve best-in-class operational performance Automate and streamline business and clinical processes Align productivity incentives with system needs Develop foundational digital capabilities
Goals	Deliver **top decile patient experience** across all facilities Deliver **top decile quality of care across all services**	Be the **healthcare employer of choice** in our 12-county region Achieve **top decile experience** scores for all caregivers	**Increase the number of patients we serve by 50%** Achieve **market-leading outpatient growth**	**Make every Guthrie specialist** accessible to all our patients **Be the national model for rural virtual care**	**Sustain a 2% operating margin** to invest in our community and remain independent **Achieve economic sustainability across all payers**

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Guthrie Pulse Center

Centralized Bed Planning

- ☑ Live in all 5 Hospitals
- ☑ Go live April 2024

Virtual Med/Surg Program

- ☑ Fully Staffed and Operational in July 2023

Virtual ICU RN Program

- ☑ Fully Staffed and Operational in March 2023

EQUUM Virtual Intensivists

- ☑ Currently supporting CH, GCMC, TH, Tow

Transfer Center

- ☑ Relocated Transfer Center
- ☑ Fully Staffed and Operational in July 2023

Telesitter

- ☑ Live since February

Central Telemetry

- RPH & GCMC- Live 5/16
- CH- Live 5/24/23
- TH & Tow- 7/2024

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Supporting Our Caregivers

- Intensivists
- Virtual Intensive Care
- Virtual Medical/Surgical Care
- Tele-sitters

Innovating Through Technology

- Transfer Center
- Centralized Bed Coordination

Elevating the Care We Provide

- The Patient Experience
- Realtime monitoring of Sepsis Alerts
- Pharmacy Integration

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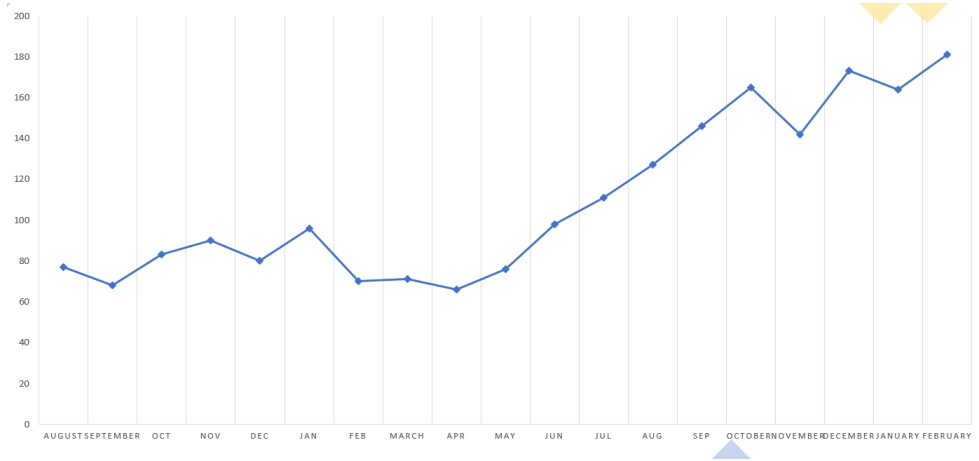
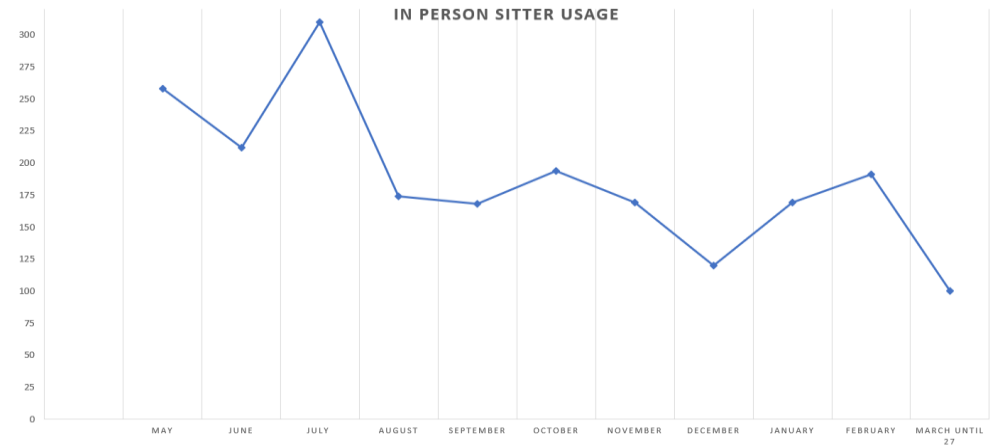
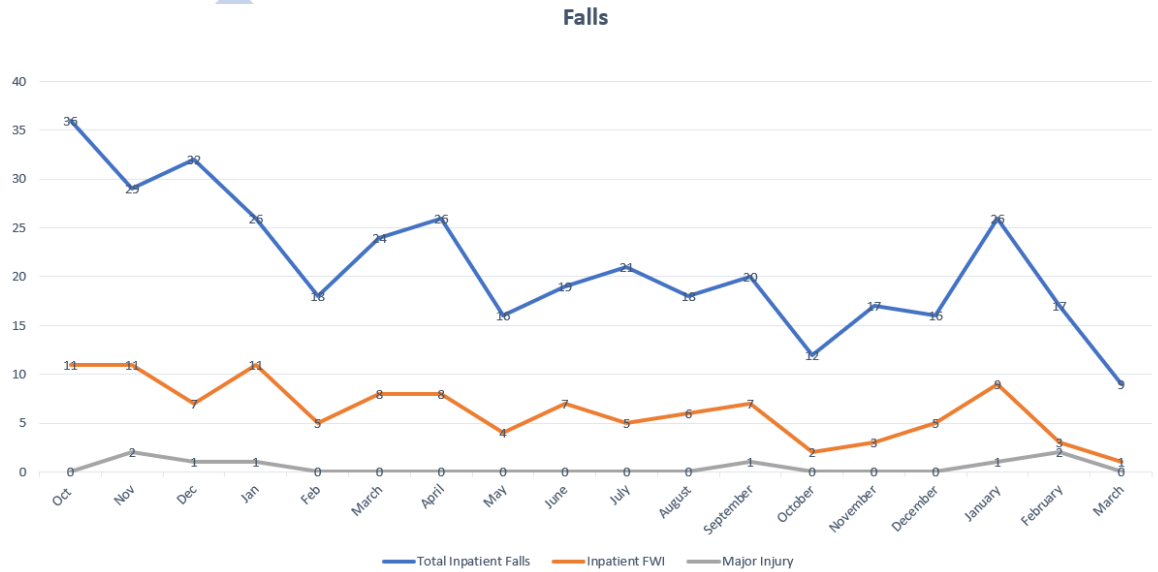
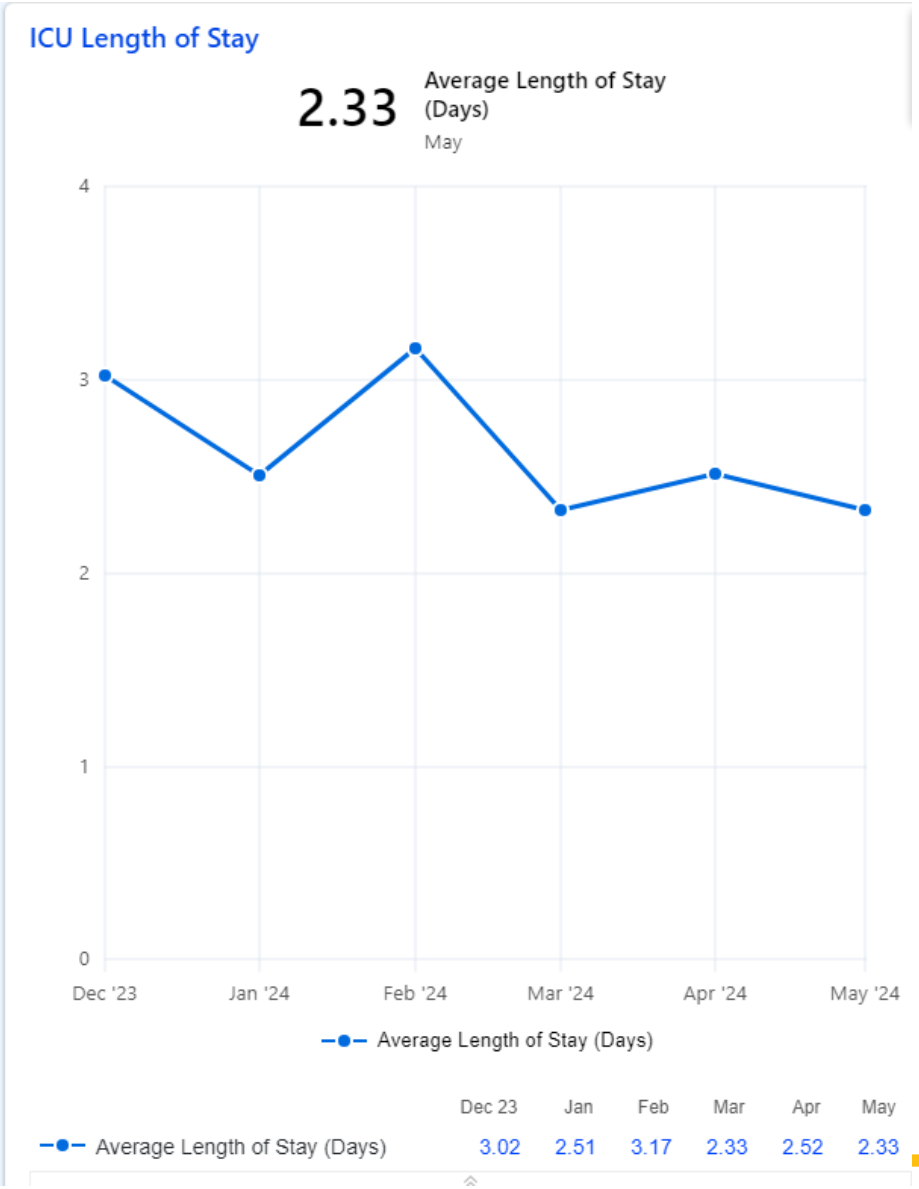
Remote Sitter





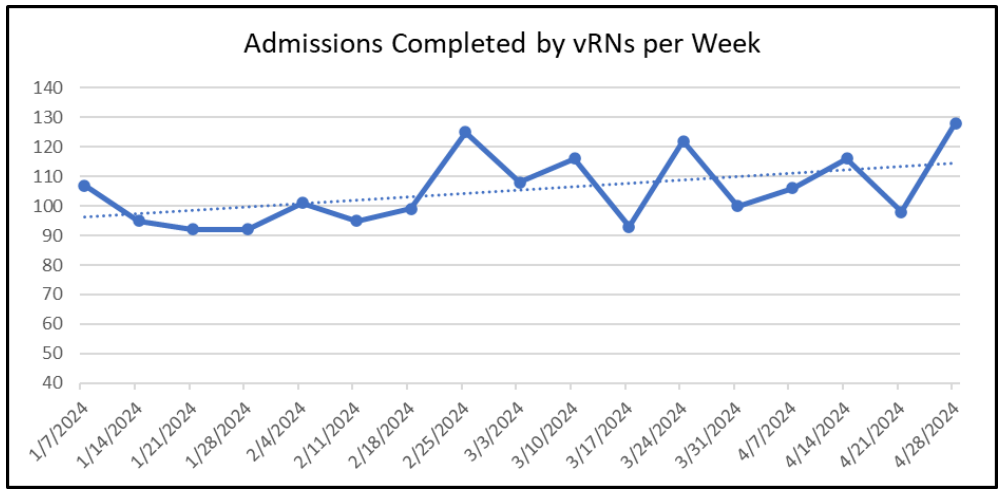


ICU LOS



The proforma assumes that the length of stay for ICU patients with a LOS greater or equal to 2 days will be reduced by 0.5 days in year 1 and 1.0 days in years 2-5. The savings calcuated for this assumption was based on FY22 actuals cost of room and board for each hospital.

Virtual Nurse Productivity

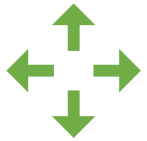


- Med/Surg vRNs completed 128 patient admissions the week of 4/28 (Saved 3,840 minutes = 2.67 days)

Med/Surg vRN Tasks	YTD Utilization (Jan-Apr 2024)	Avg Time Per Task in Mins	Total Time Saved in Mins
Admissions	1866	25	46,650
Discharge Documentation/Education	2361	10	23,610
Care Plan Initiation	1762	5	8,810
Second Sign Meds	0	5	0
Blood	76	15	1,140
PRN/Pain reassess	4	5	20
Renew tele orders	1	10	10
Pre-Op checklist	4	15	60
MRI Screening (started mid-April)	18	20	360
Family Updates	1	20	20
Skin Assessment	15	15	225
Contact MD for RN	25	5	125
Precepting/Consult vRN	7	10	70
CIWA Assessment	20	10	200
MEWS	180	5	900
Document for RN	139	5	695
Sepsis	845	10	8450
Vancomycin	1796	8	14368
Mobility (per day)	120	20	2400
Digital HF Pathway	166	20	3320
Total (Min)			**111,433**
Bedside Nurse Hours Saved			**1857**

Med/Surg vRN Tasks	Annualized Utilization	Avg Time Per Task in Mins	Total Time Saved in Mins
Admissions	5598	25	139,950
Discharge Documentation/Education	7083	10	70,830
Care Plan Initiation	5286	5	26,430
Second Sign Meds	0	5	0
Blood	228	15	3,420
PRN/Pain reassess	12	5	60
Renew tele orders	3	10	30
Pre-Op checklist	12	15	180
MRI Screening	54	20	1,080
Family Updates	3	20	60
Skin Assessment	45	15	675
Contact MD for RN	75	5	375
Precepting/Consult vRN	21	10	210
CIWA Assessment	60	10	600
MEWS	540	5	2,700
Document for RN	417	5	2,085
Sepsis	2535	10	25,350
Vancomycin	5388	8	43,104
Mobility (per day)	360	20	7,200
Digital HF Pathway	498	20	9,960
ADD			
Virtual Discharges (Est 30 per day)	10950	20	219,000
Corning ED Sepsis (Est 10 per day)	3650	20	73,000
Total (Min)			**626,299**
Bedside Nurse Hours Saved			**10,438**

Impact



Scalability and Flexibility

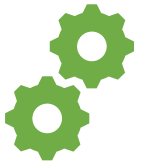
ability to **adapt more dynamically** to changing healthcare needs, such as sudden increases in patient volume or the integration of new services or facilities into the system.

Improved Resource Utilization

optimize bed usage across the system, **reducing wait times** for bed availability and **improving patient flow.** Tele-sitting reduced need for physical sitters. AI has enhanced the capability of the program.

Enhanced Patient Monitoring

virtual Intensivists and eICU enable real-time monitoring and **intervention by specialists** for critically ill patients. **Virtual Nursing** extends the reach of nursing staff, allowing for more frequent monitoring and care of patients in remote areas.



Streamlined Operations

centralized patient transfers streamlines process, **improving efficiency and coordination** between facilities. Integrated Command Center serves as the nerve center for hospital operations, providing a bird's-eye view of all critical functions. **This the basis of the Pulse Center.**

Future Planning

Supporting Our Caregivers

- Adding workplace safety
  - Caregivers can use a safe word to alert AI that help is needed in the room
- Enhancing best practice
  - Hand washing and knock at the door

Innovating Through Technology

- Care Model Redesign
  - Virtual Respiratory Therapy
  - Patient Navigator
  - Centralizing EVS and Transport
  - Turning on Staff Duress
- Training Pressure Ulcer Reduction Algorithm

Elevating the Care We Provide

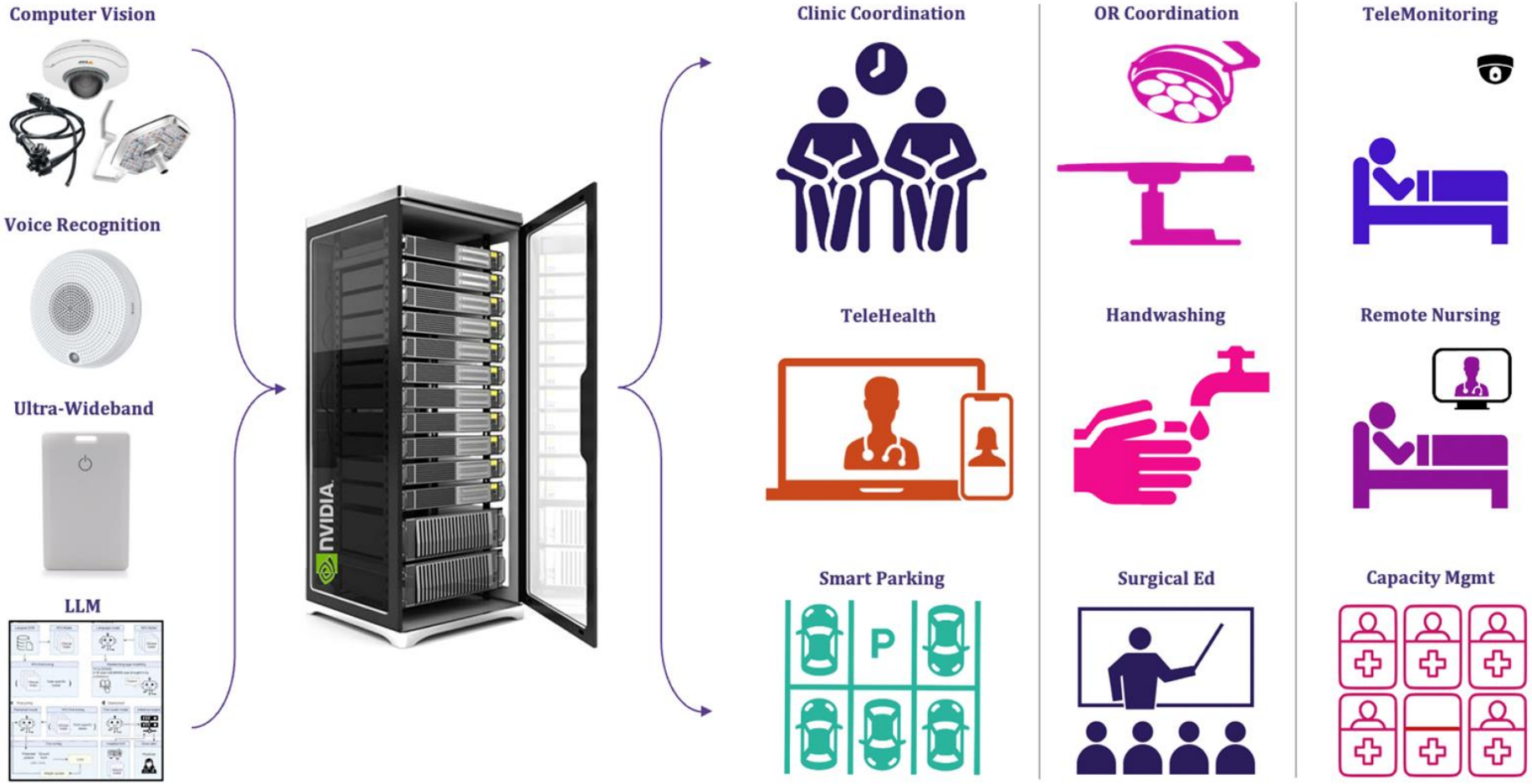
- Enhanced Discharge process allowing for virtual education and discharging
- Home Health / Hospice Support
- Developing Remote Monitoring Plan
- Developing “sale of service” plan

Modern Healthcare TOP Innovators 2023

03 The Smart Hospital. Realized

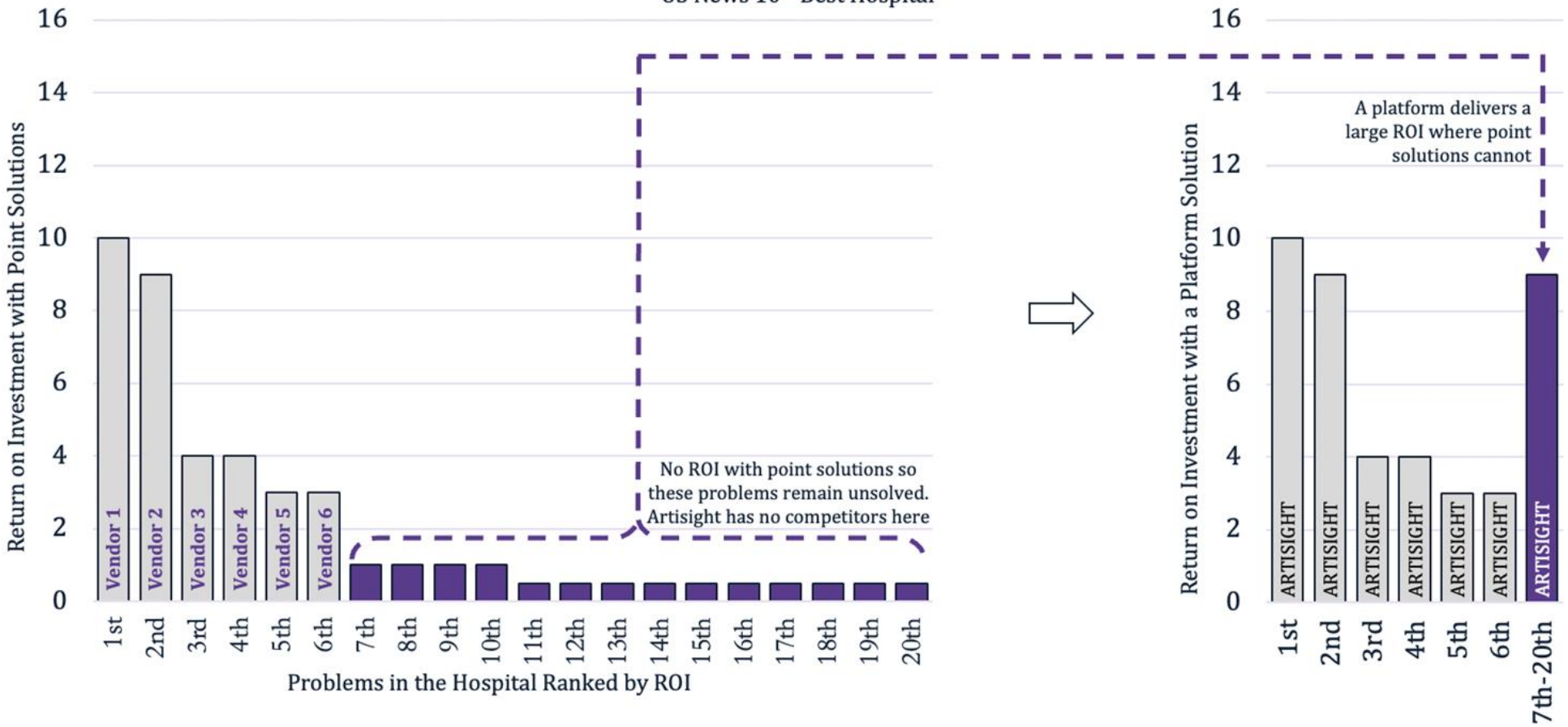
Defining the capabilities and solution modeling to support integration of digital health into the Smart Hospital Framework. How Tech and AI unite for operational efficiency and clinical outcomes

What is a Smart Hospital



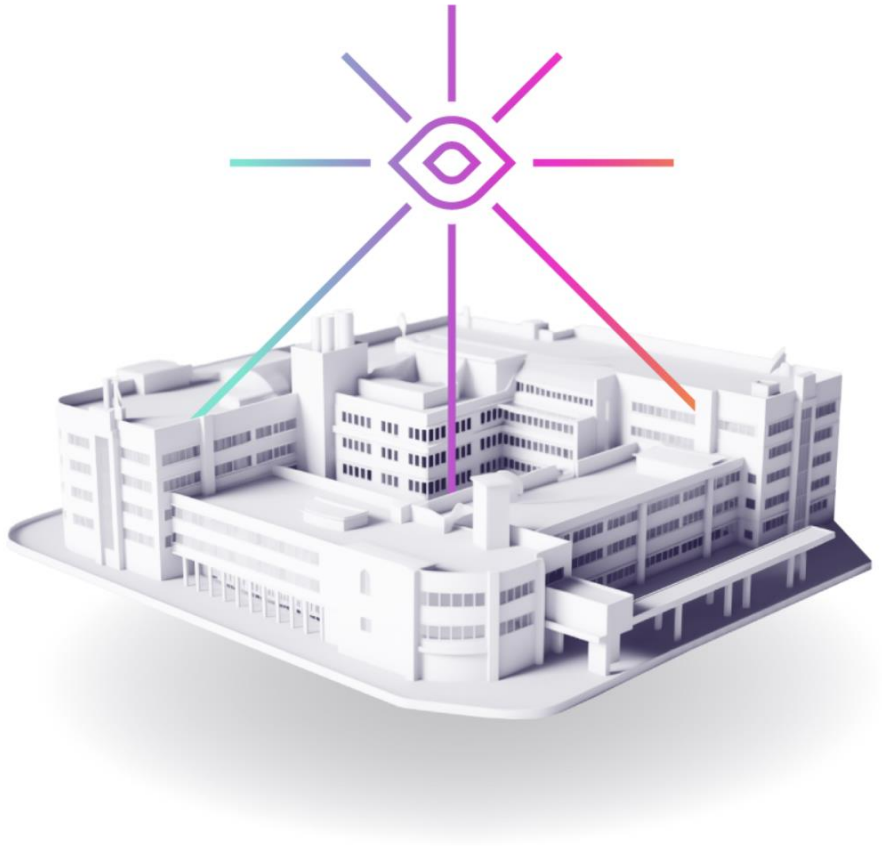
Why a Platform vs. Point Solutions

"I don't want 500 vendors and applications to help me solve my problems. I want a few, capable platforms."
-Doug King
CIO, Northwestern Medicine
US News 10th Best Hospital



The Problem: How to bring the JOY back to Medicine

- Transform clinical workflows to support efficiency
- Collect data using ambient sensor technology
- Reduce burnout and cognitive load through clinical automation
- Untether clinicians from the burden of documentation
- Improve outcomes with real time monitoring and feedback



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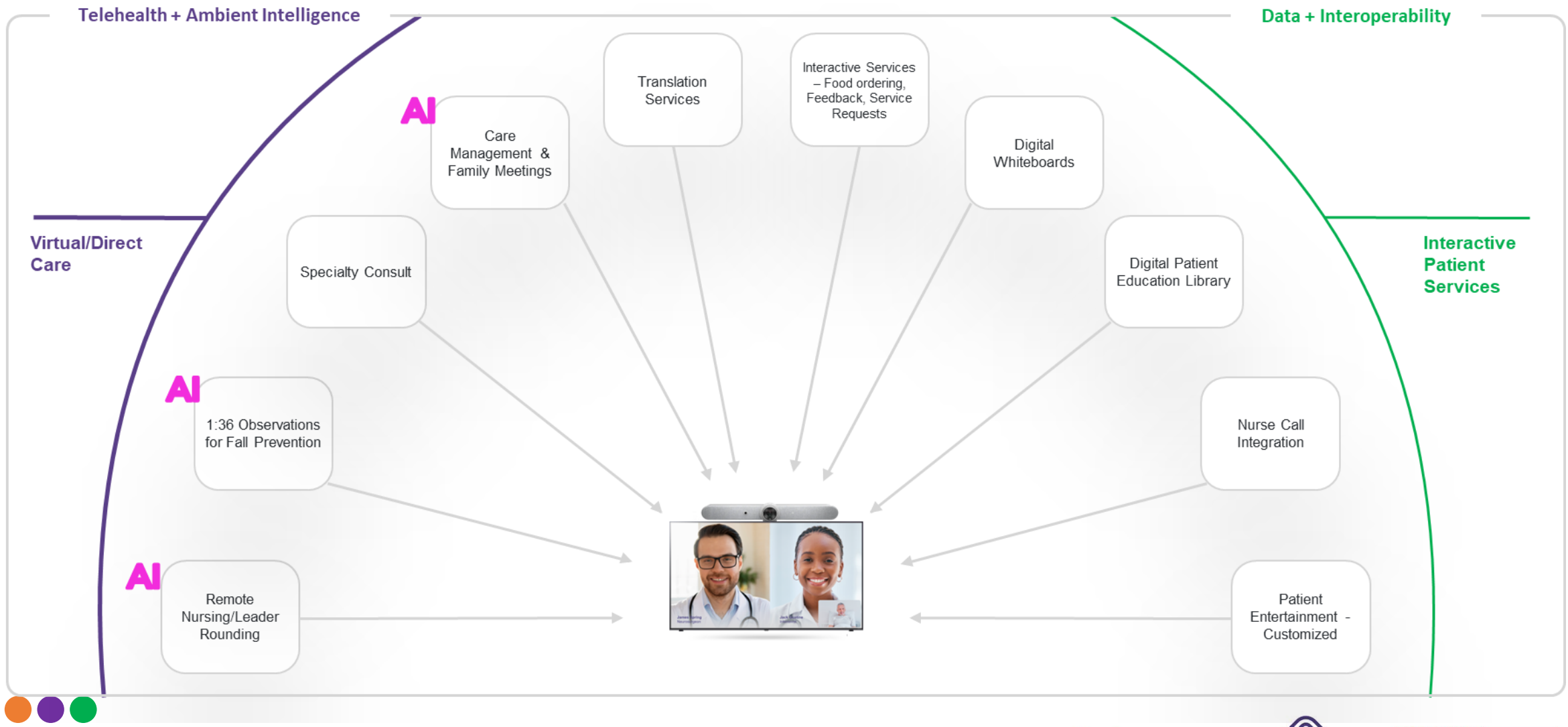
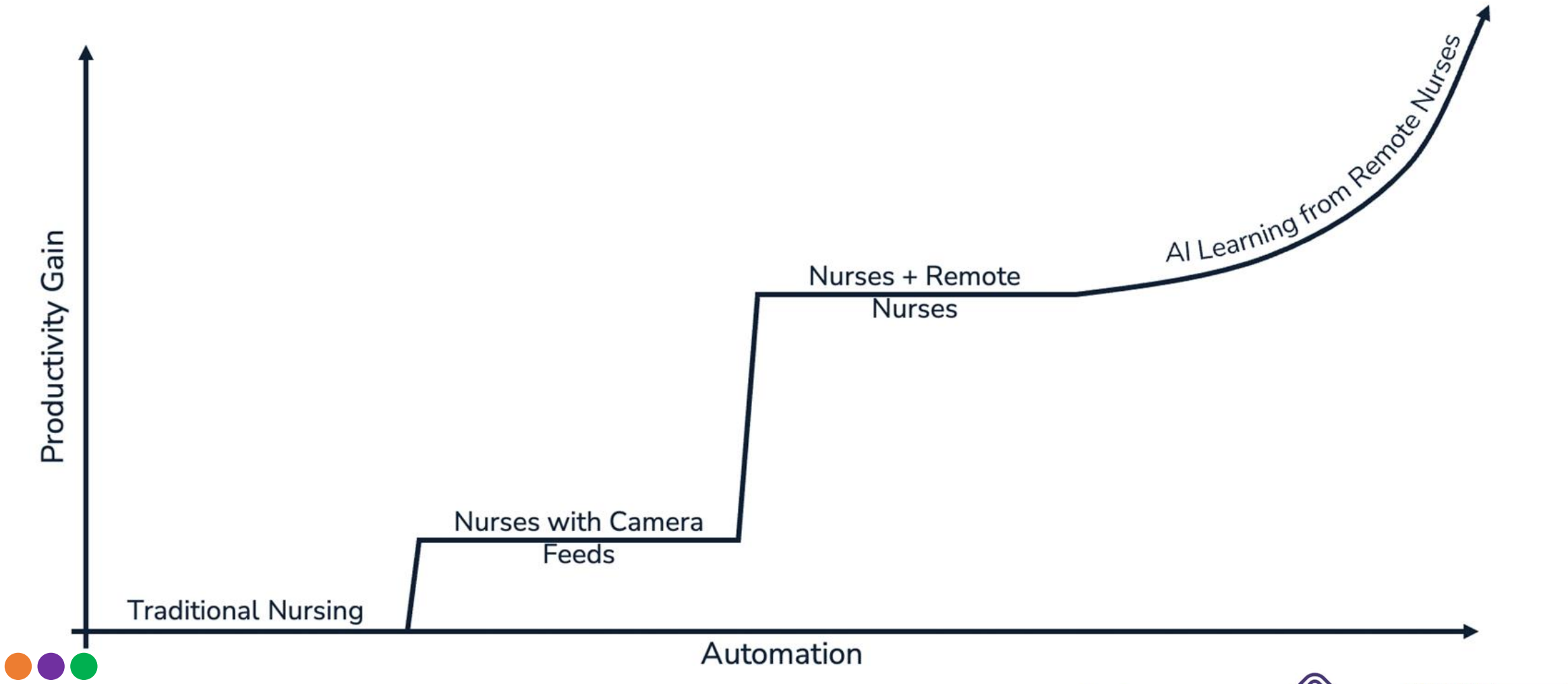
Hospital Room of the Future



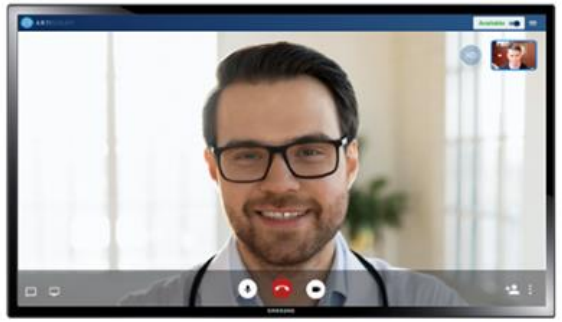
Adoption Strategy



End to End AI-Based Automation Platform

Telemonitoring

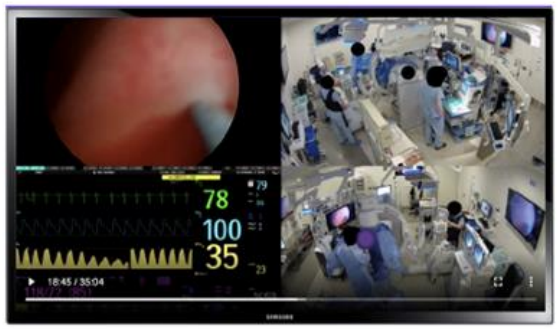
Remote Nursing



TeleHealth

AI Services

OR Coordination



Surgical Quality Improvement

Capacity Management

Clinic Coordination

04
Workforce . Reinvented

The Virtual Dimension of care enabled through a distributed telehealth network

Optimizing Patient Flow and the integration of workforce solutions into Smart Hospital Design

The Smart Hospital is at the Intersection of the Two Biggest Trends in Healthcare Today

Workforce Redesign

Existing Acute Care Challenges Limit Efficiency…

Not enough staff to support optimal care at optimal operating costs

Delays in patient flow result in longer patient length of (hospital) stay

Patient Transfers imbalance bed utilization

Virtual Care

… and Structural Impediments Inhibit Evolution

Lack of Innovation in Staffing

- Use of agency staffing driving further increases in care costs

Disconnected Telehealth

- Venue-based investments without clear Telehealth Maturity Roadmap

Fragmented Partnerships

- No disintermediated partners invested in partnering for mutual success

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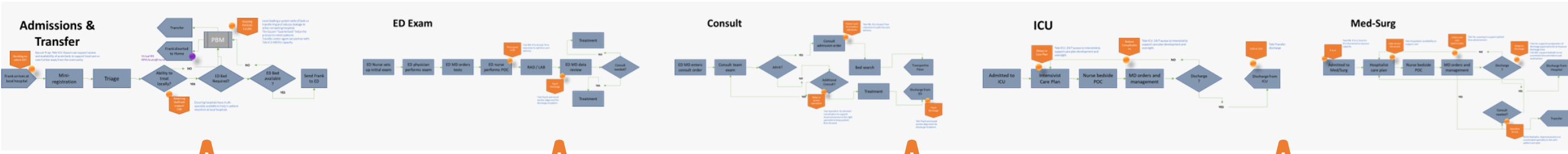
Hot Spots in Patient Journey Delay Care

Patient flow *represents* ***the ability of the healthcare system to serve patients quickly and efficiently as they move through stages of care.***



Access / Surge Block:

- Inefficient Transfers
- ED Boarding
- Delays in Care Coordination

Resource Mismatch:

- Lack of Staffing
- Longer Wait Times
- Utilization variability

Insufficient Holistic Interventions:

- Low Patient Experience
- Low Staff Satisfaction
- Delays in Care

Inconsistent Care:

- Lack of Care Standardization
- Contributors to Burnout
- Patient Care Quality / Cost

Samadbeik et al.
BMC Health Services Research (2024) 24:274
https://doi.org/10.1186/s12913-024-10725-6

Telehealth Enabled Clinical Operations

"Due to rising healthcare costs and patient expectations… the use of telemedicine for providing healthcare services has seen rapid development."

Reducing Overcrowding/ Unnecessary Transfers

- Patient triage to determine patients' condition
- Review pf system level capacity to optimize bed utilization and patient transfer rates

Tele-Consultation to Improve Continuity

- Seamless consultation with specialists during the ED visit
- Reduced delays in care
- Reduce potential unnecessary transfers.

Alleviating Staffing Gaps with Virtual Staffing Solutions

- Provide access to access to remote clinicians, 24/7
- Support for underserved areas / rural
- Helping address staffing mismatches and reduce burnout.

Standardizing Care with Protocol-driven Telehealth

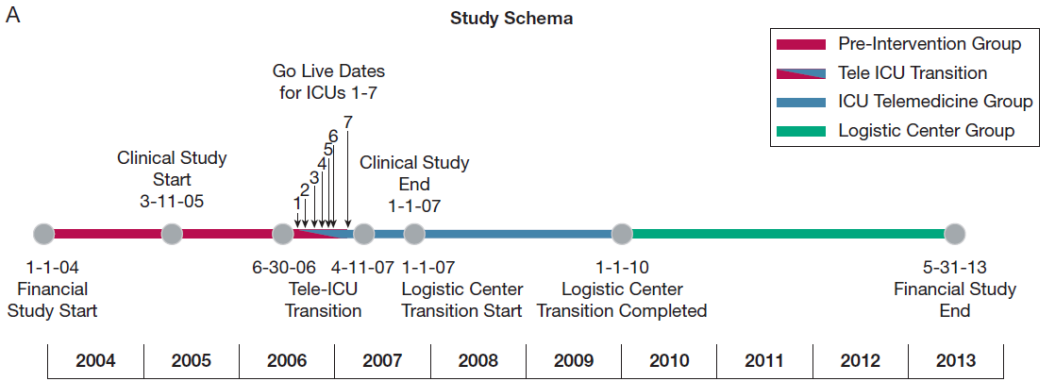
- Support implementation of standardized care protocols across different hospitals in a system of care
- Ensure a continuous care plan and reduce variability in patient outcomes.

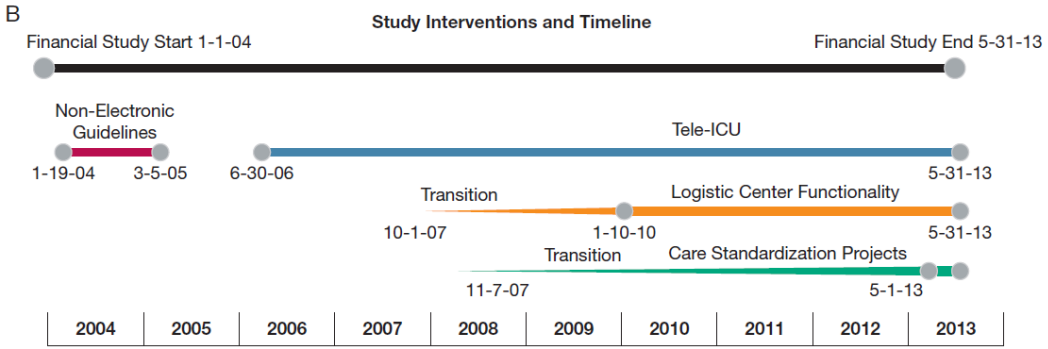
Enhanced Resource Allocation

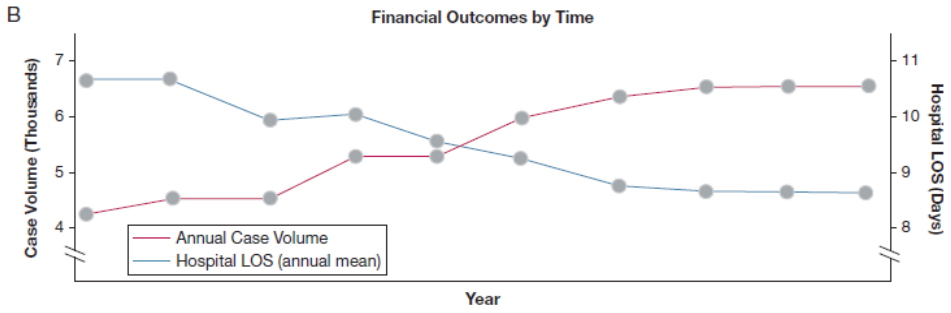
- Support bedside care team confidence in high acuity scenarios
- Augment night/weekend staff needs
- Provide improved work/life balance availability

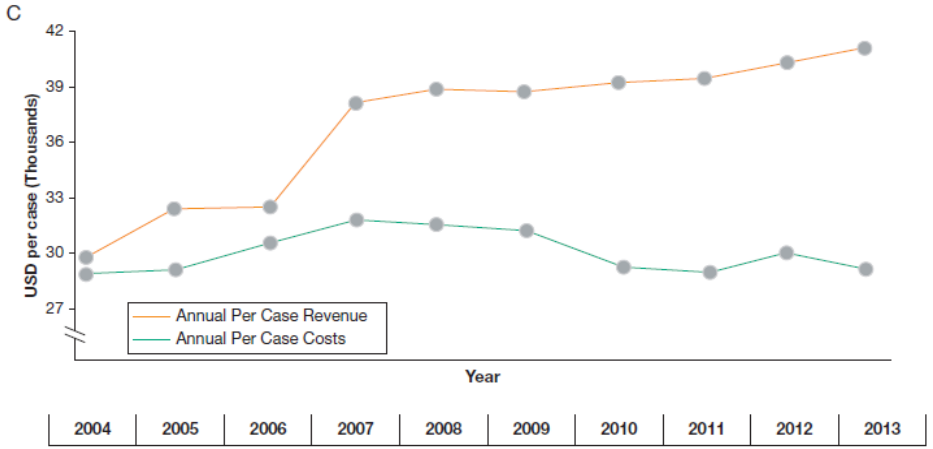
Journal of Public Health
https://doi.org/10.1007/s10389-021-01684-x

Building a Telehealth-Enabled Framework









RESULTS: Annual case volume increased from 4,752 (pre-ICU telemedicine) to 5,735 (ICU telemedicine) and 6,581 (logistic center). **The annual direct contribution margin improved from $7,921,584 (pre-ICU telemedicine) to $37,668,512 (ICU telemedicine) to $60,586,397 (logistic center) due to increased case volume, higher case revenue relative to direct costs, and shorter length of stay.**

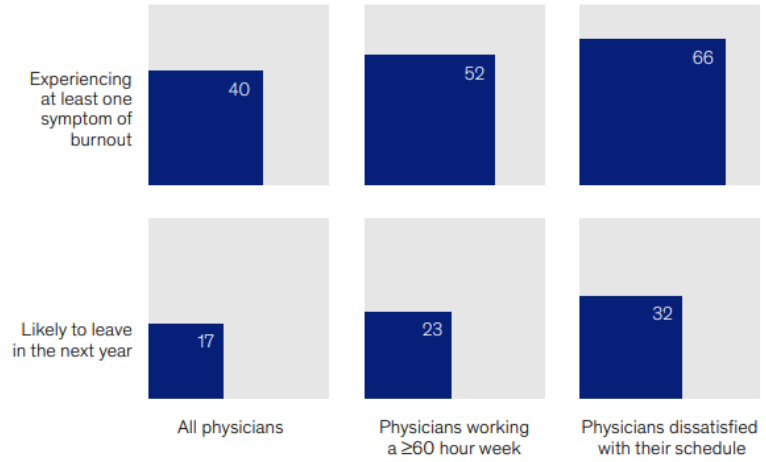
ICU Telemedicine Program Financial Outcomes Craig M. Lilly, MD, FCCP; Christine Motzkus, MPH; Teresa Rincon, RN, BSN; Shawn E. Cody, PhD, MSN/MBA, RN; Karen Landry, BS; and Richard S. Irwin, MD, Master FCCP; for the UMass Memorial Critical Care Operations GroupCHEST 2017; 151(2):286-297

The Physician Shortage isn't Going Anywhere

By the end of this year, the United States is expected to have a shortage of up to 64,000 physicians*

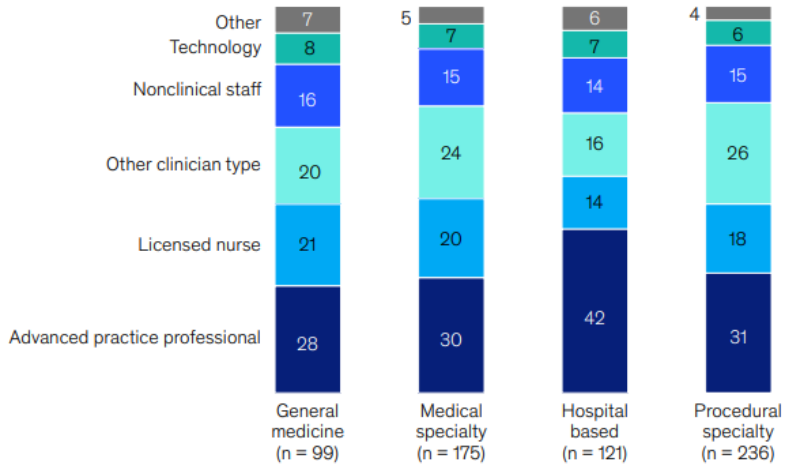
Schedule dissatisfaction affects physician respondents' well-being even more than the absolute time spent on the job.

US physician work hours and schedule as a factor in burnout and likelihood to leave current role, % of respondents (n = 631)



Physicians' clinical time is not optimized for patient care that only they can do, with nearly 20 percent identified by respondents as delegable tasks.

Share of delegable time that could be covered by nonphysician roles according to US physicians, by specialty, % of respondents (n = 631)



McKinsey & Company

GlobalData. *The complexities of physician supply and demand: Projections from 2021 to 2036*, AAMC, March 2024

Telehealth for System Wide Value Generation

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Patient Flow

- ✓ Increased **Bed Capacity**
- ✓ Improved **Patient Flow**
- ✓ Improved **Patient Transfer**
- ✓ Improved **Operational Efficiencies**

Financial

- ✓ Decreased **Length of Stay**
- ✓ Increased **Revenue**
- ✓ Decreased **Expenses**
- ✓ **Operating Margin Gains**

Staff Experience

- ✓ Improved **Team Communication**
- ✓ Increased **Clinical Satisfaction**
- ✓ Improved **Staffing Gains**

Patient Experience

- ✓ Improved **Patient Care**
- ✓ Improved **Patient Satisfaction**
- ✓ Reduced **Wait Times**

Actionable Data

- ✓ Improved **Clinical Performance Data**
- ✓ Improved **Processes for Measurement**

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05
Panel Discussion.

Synthesize lessons learned and the journey to become a smart hospital; develop actionable strategies that can be replicated

06

THANK YOU

Transforming Healthcare

The Smart Hospital Approach to Digital Health and Systems Thinking