

Necessity And Innovation: Observation Units In Novel Settings

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Disclosures

- I have no conflicts of interest or disclosures.

Objectives

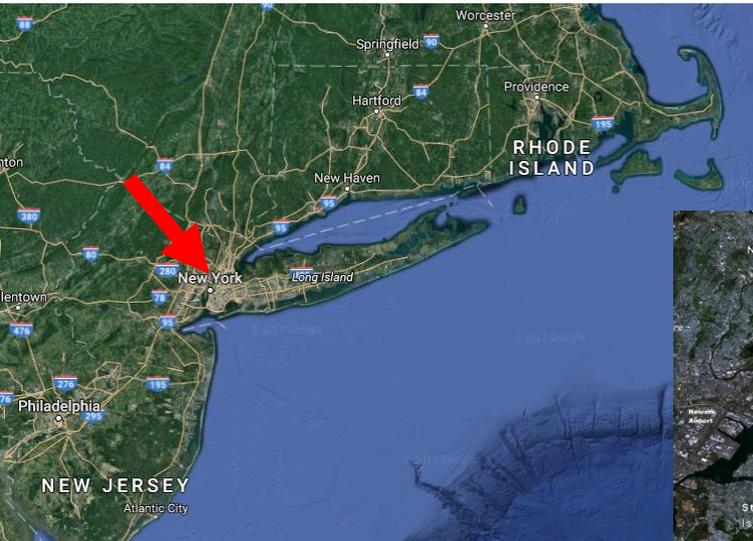
- Learn how to use observation medicine as an efficient, resource-sparing strategy for healthcare delivery
- Learn how to extend observation medicine beyond the acute care hospital

Necessity in Healthcare

- Underserved
- Disaster
- Rural
- Remote
- Underdeveloped
- Significant transient populations
- Health care policy change/delivery system reform

The Night Of October 29th, 2012

New York City - Manhattan

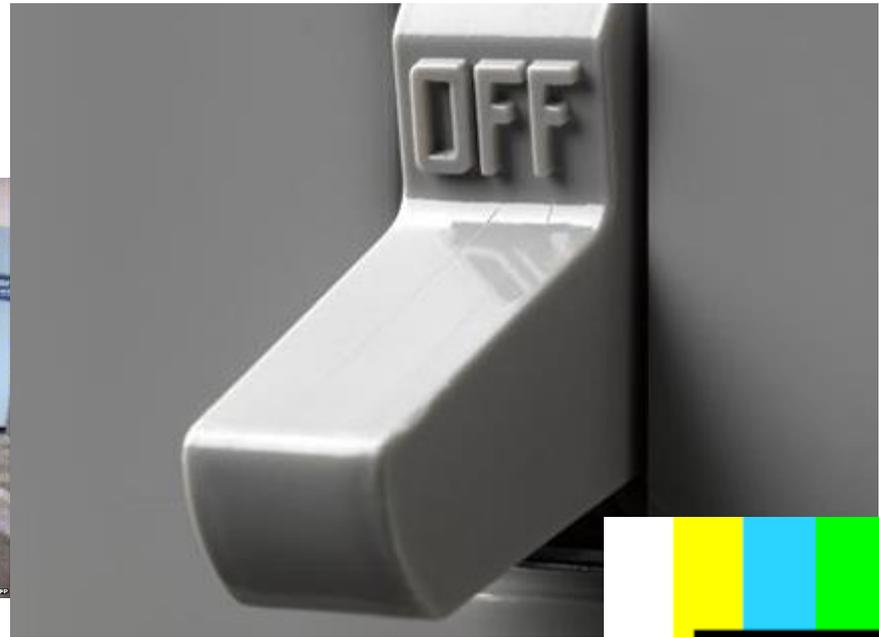


23 square miles
71,000 people per sq/mile

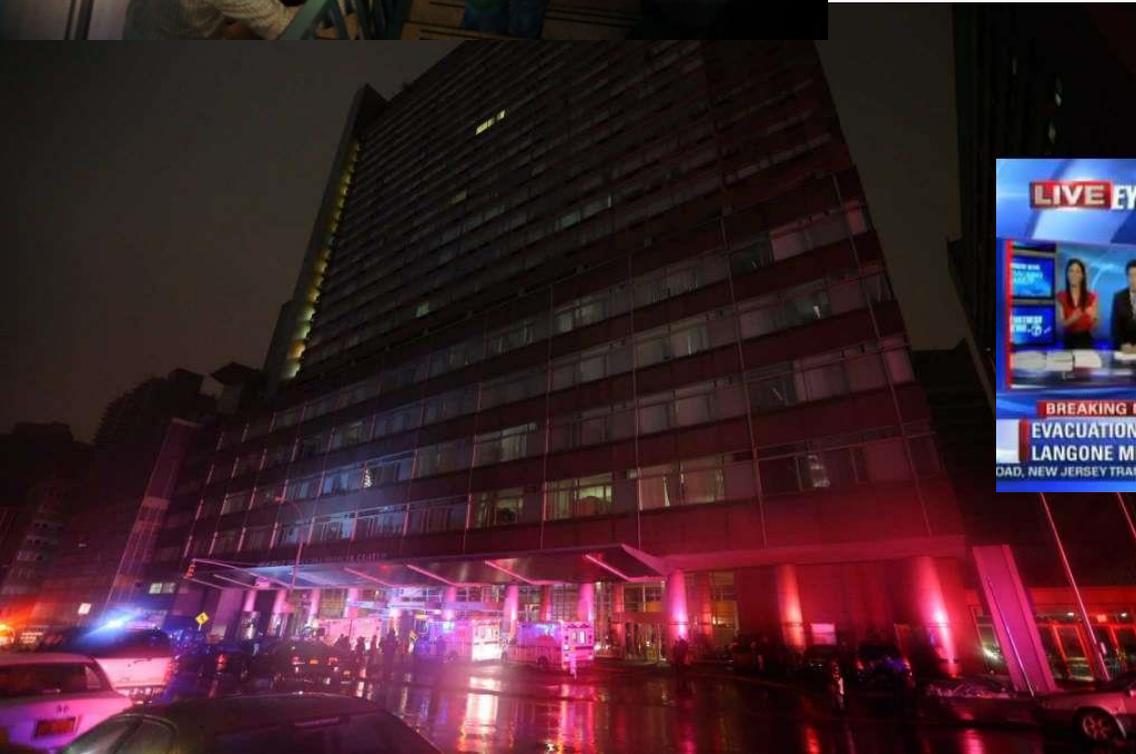
Sandy: A Category 2 Hurricane



Catastrophic Flooding



Orders to Evacuate



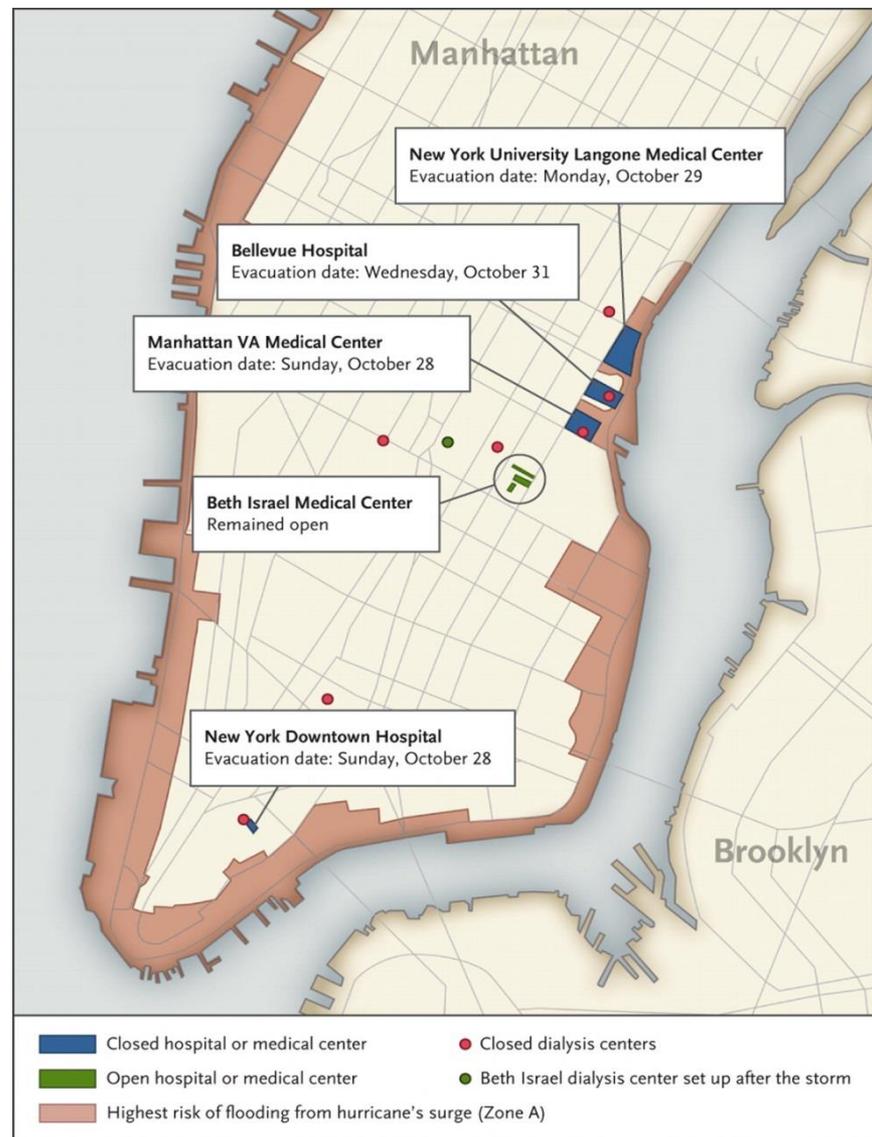
Lower Manhattan Hospital Evacuation

- NY Downtown Hospital
- Manhattan VA Hospital
- NYU Langone Medical Center
- Bellevue Hospital



Public Health Disaster

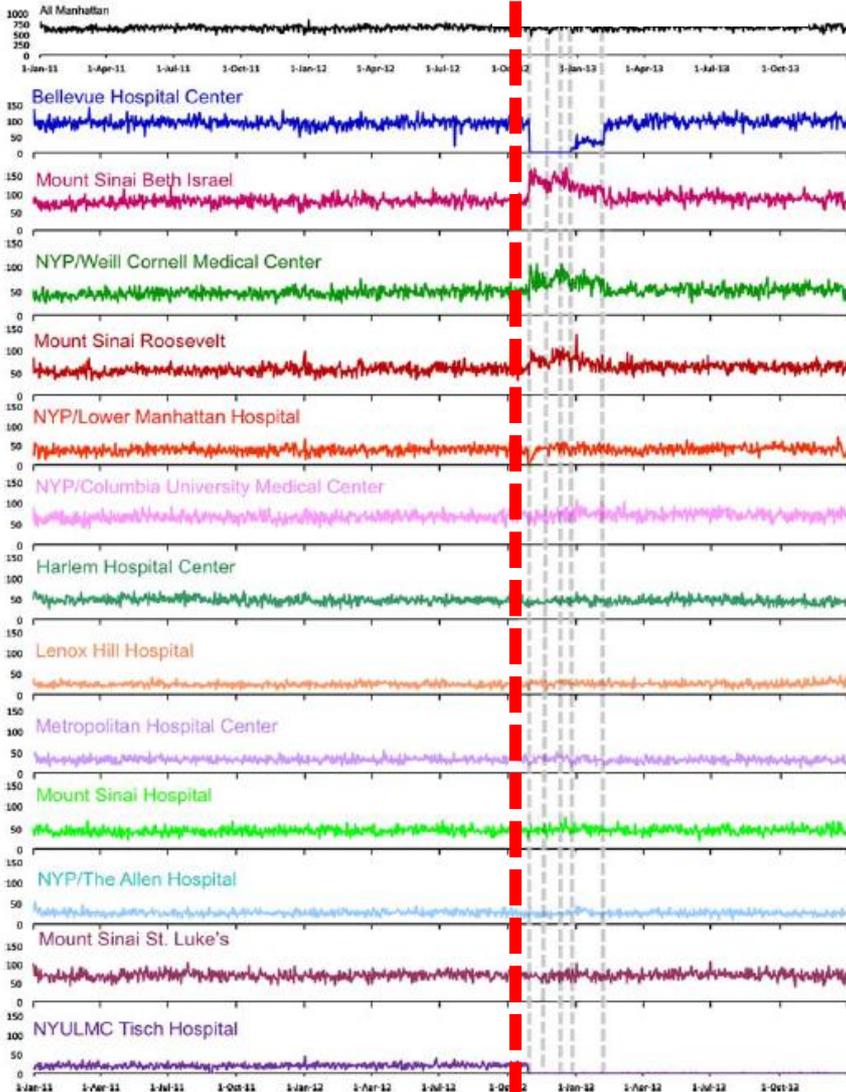
- 4 emergency hospital evacuations combined with:
 - 2 recent non-storm related hospital closures
 - Severe disruption outpatient networks from storm
- Only 1 major hospital remaining for all of lower Manhattan
 - Beth Israel Medical Center
 - Increase of 100 additional ambulances/day
 - Avg daily ED volume doubled



Jangi S. N Engl J Med 2012;367:2267-2269.

Critical Emergency and Acute Care Shortage

Hurricane Sandy



Evacuated

Surge

Surge

Surge

Evacuated

Evacuated

- FDNY EMS Transports to remaining lower Manhattan Hospitals surged following the closure of local EDs

Prehospital Indicators for Disaster Preparedness and Response: New York City Emergency Medical Services in Hurricane Sandy

Stas W. Smith, MD; James Braun, MA; Ian Portelli, PhD, MSc; Sidrah Malik, MPH, MHA; Gerni Alameda, MD; Elizabeth Lancelot, MPH; Binhan Wang, PhD; Ming Hu, PhD; David C. Lee, MD, MS; David J. Prezant, MD; Lewis R. Goldfrank, MD

Necessity



Necessity and Innovation

News

NYU Langone Medical Center Opens Urgent Care Center As Recovery From Sandy Continues

January 14, 2013 5:26 PM

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77 days later...

- **Observation Unit launched with Urgent Care Center**
 - Restore acute care services
 - Advance overall medical center recovery
 - Maximize patient care with limited resources
 - Rebuild outpatient-inpatient interface in absence of ED

...ED remained closed for additional 16 months...

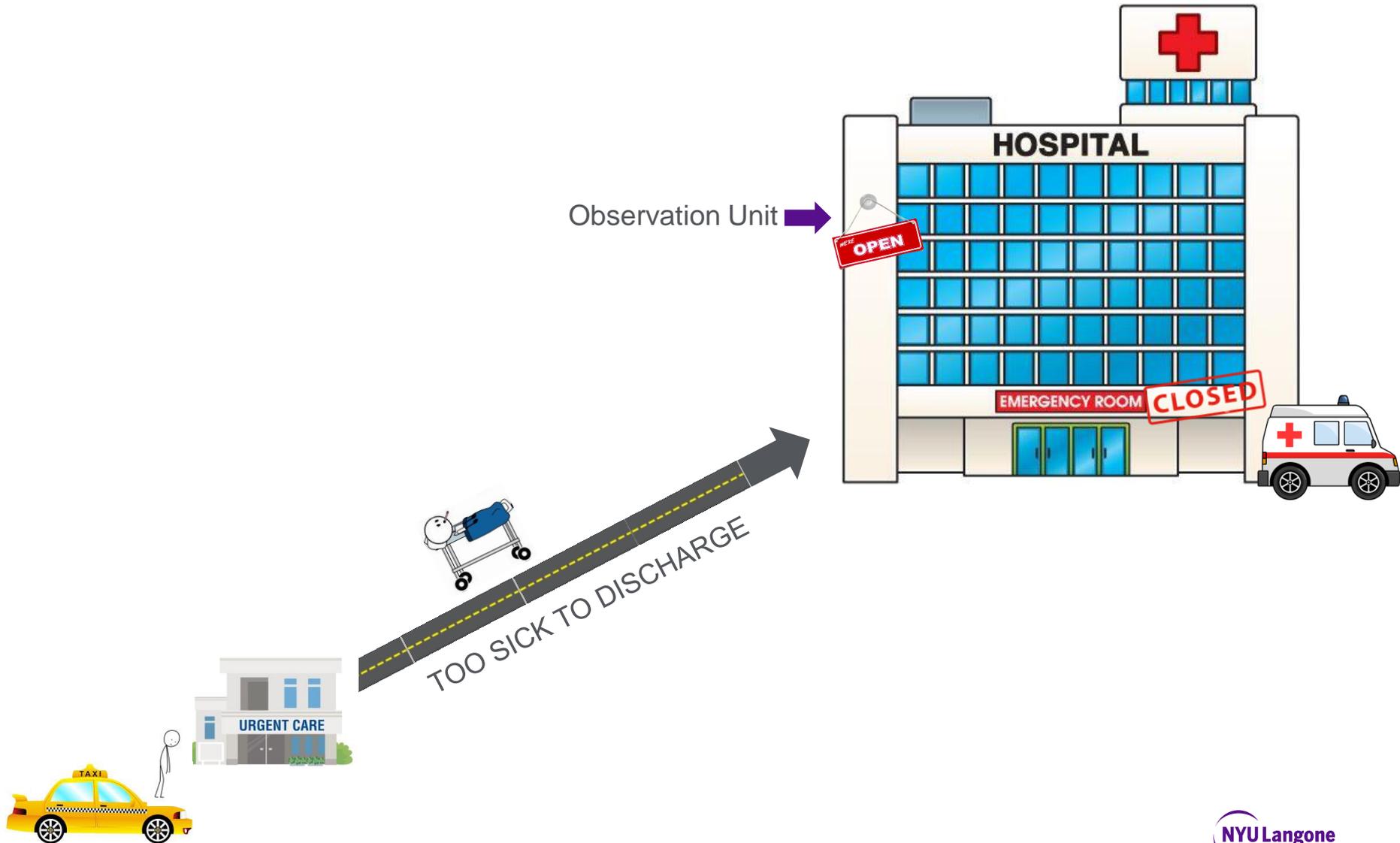
Urgent Care Center

- First Urgent Care for Department of Emergency Medicine
- Staffed by emergency medicine nurses, physicians, physician assistants
 - Staff recalled from all over NYC
 - Deployed to remaining area hospitals to help with patient volumes
- Patients were dispositioned to observation unit if met criteria

Observation Unit

- Staffed by emergency medicine physicians, physician assistants; and inpatient med/surge nurses
- First observation unit for Department of Emergency Medicine
 - 9-bed dedicated unit on repurposed hospital wing (16th floor)
- Resource-sparing strategy
 - Hospital resources coming back online
 - High demand for ‘observation-type’ care
 - Disrupted primary care networks at various stages of recovery

UCC and Obs Unit Patient Flow



Inclusion and Exclusion Criteria for UCC Obs Unit

- **Inclusion Criteria**

- Patients requiring the active management of their condition following the initial UCC visit to determine the need for inpatient admission or discharge

- **Exclusion Criteria**

- No clear working diagnosis
- No clear management plan
- Acute exacerbation of psychiatric condition
- Acutely altered mental status
- Hemodynamic instability
- Sepsis
- Requirement for nursing evaluation more frequently than every 4 hours
- Agitated, combative or acutely intoxicated patient (may be placed in Observation Services after clinical sobriety achieved in UCC)

The “First 15” Protocols – Relatively Simple Observation

Clinical Protocols Used in the Emergency Department Observation Service^a

Abdominal Pain
Allergic Reaction
Asthma/COPD Exacerbation
Back Pain
Cellulitis
Chest Pain
Dehydration
Headache
Metabolic Disorder
Pneumonia
Pyelonephritis
Syncope
Transfusion
Transient Ischemic Attack
Venous Thromboembolism

^aAbbreviation: COPD, chronic obstructive pulmonary disease.

Protocols at go-live were a best-guess guess of what our patients would be like

Clinical Resources

- **Nursing**

- 4:1 patient to nurse ratio
- Dedicated to OU care

- **APP (NP/PA)**

- Dedicated to OU care
- Provide OU care under physician supervision

- **Attending**

- Reassesses all patients in the OU daily
- Available 24/7
- Rounded in OU, then supervised care

- **Dedicated Leadership**

- Develop and monitor protocols
- Update competencies
- Support flow from UC
- Monitor utilization and quality
- Training, support

Collaborating services

- **Cardiology**
 - Chest Pain
 - Atrial tachycardia
 - CHF
- **Neurology**
 - TIA
 - Vertigo
 - Headache
- **Surgery**
 - Abdominal pain
- **Gastroenterology**
 - GI Bleed
- **Diagnostic Services**
 - Priority testing and resulting
 - Streamlined workflows
 - Non-invasive cardiology
 - Radiology
- **Care management, PT, SW**
 - Impact on ability to discharge
 - Ancillary service availability
 - Care management and social worker
 - Effective disposition planning

The Urgent Care and Observation Unit

Overall First-Year Performance Metrics for the Emergency Department Observation Service

Volume, No.	Length of Stay, hh:mm	Inpatient Conversion Rate, %
3167	16:27	16

- 55,723 urgent care visits
 - 20% of total hospitalizations cared for in observation unit
 - 5.7% of urgent care center visits were placed in observation
 - Significant need for observation care
 - Major provider of healthcare
- The 'metrics' were within target for simple observation
 - <24 hour LOS
 - Conversion rate <20%

~80% of the Observation Volume

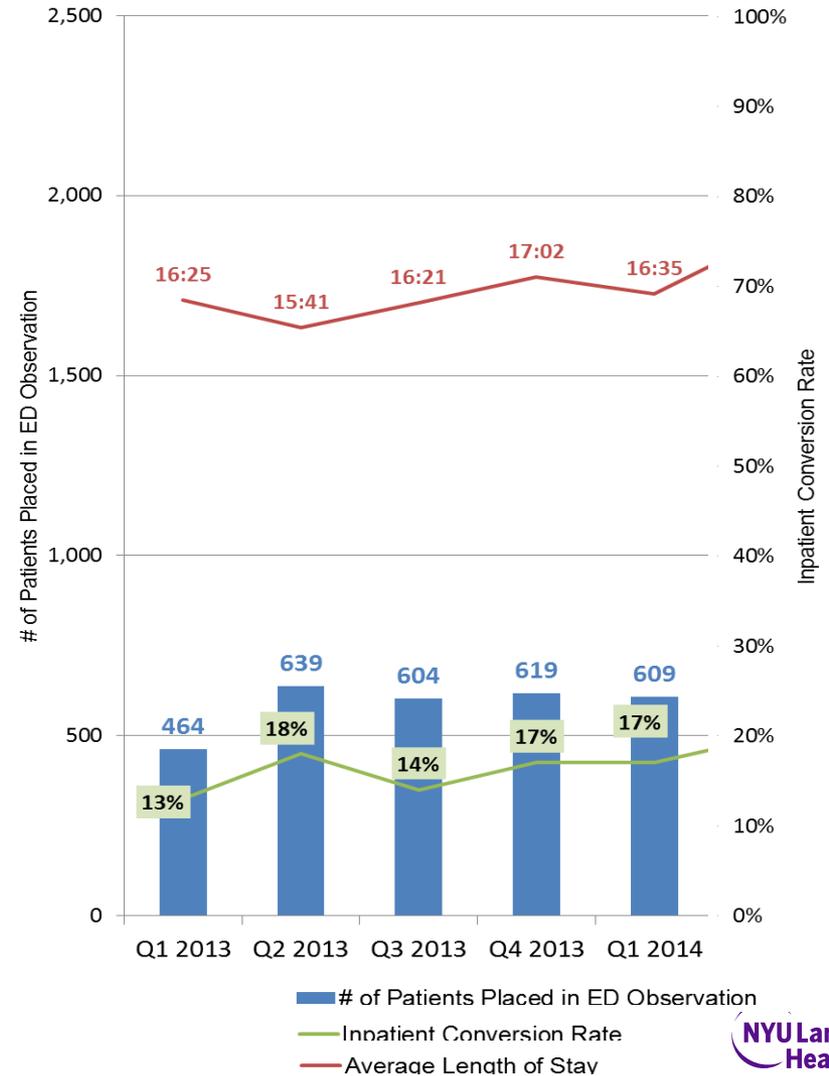
Most Commonly Used Emergency Department Observation Services Clinical Protocols with Performance Metrics^a			
Protocol	Volume, No.	Length of Stay, hh:mm	Inpatient Conversion Rate, %
Chest pain	1,255	16:22	9
Cellulitis	371	18:17	22
Syncope	235	16:59	11
Abdominal pain	229	16:13	28
TIA	90	15:20	9
Dehydration	96	16:10	17
Pneumonia	66	17:34	33
Pyelonephritis	71	13:31	22

^aAbbreviation: TIA, transient ischemic attack.

Majority of care provided with common obs unit protocols

April 22nd 2014....the ED re-opened

- ED re-opened
- Urgent Care closed
- Obs Unit remained





Observation Unit Background



Service	OU Type	No. of Pts	Length of Stay (hours)	IP Conversion Rate
A	1	1223	20	18%
B	4	827	20	41%
C	4	223	18	34%
D	4	90	22	24%

- Observation service delivery more effective when delivered from a type 1 unit

Observation Service Delivery Models

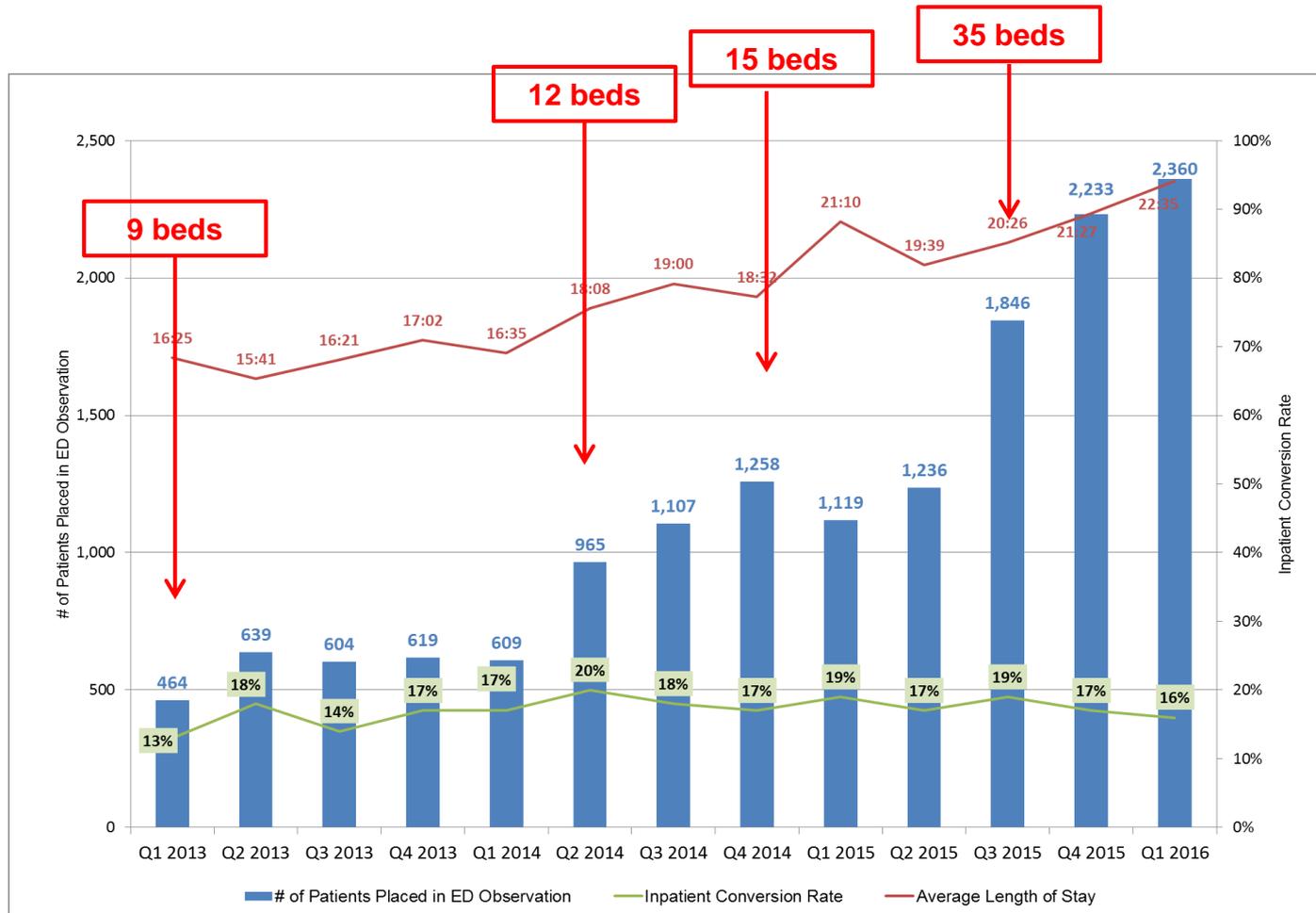
Hospital Settings In Which Observation Services Are Provided

Setting	Description	Characteristics
Type 1	Protocol driven, observation unit	Highest level of evidence for favorable outcomes Care typically directed by ED
Type 2	Discretionary care, observation unit	Care directed by a variety of specialists Unit typically based in ED
Type 3	Protocol driven, bed in any location	Often called a "virtual observation unit"
Type 4	Discretionary care, bed in any location	Most common practice Unstructured care Poor alignment of resources with patients' needs

Ross et al. Health Aff 2013;32:2149-2156

- **Type 1:** only 1/3rd observation services delivered in this model
- **Type 4:** 'scatter bed' model, majority of observation services delivered in this model; observation status in an 'inpatient' bed, traditional 'inpatient' workflows

Consolidation of Observation Services into Type 1 Unit



- Consistent EDOU growth, innovation, clinical excellence
- Shift from 'simple' observation to 'complex' observation

Necessity, Innovation

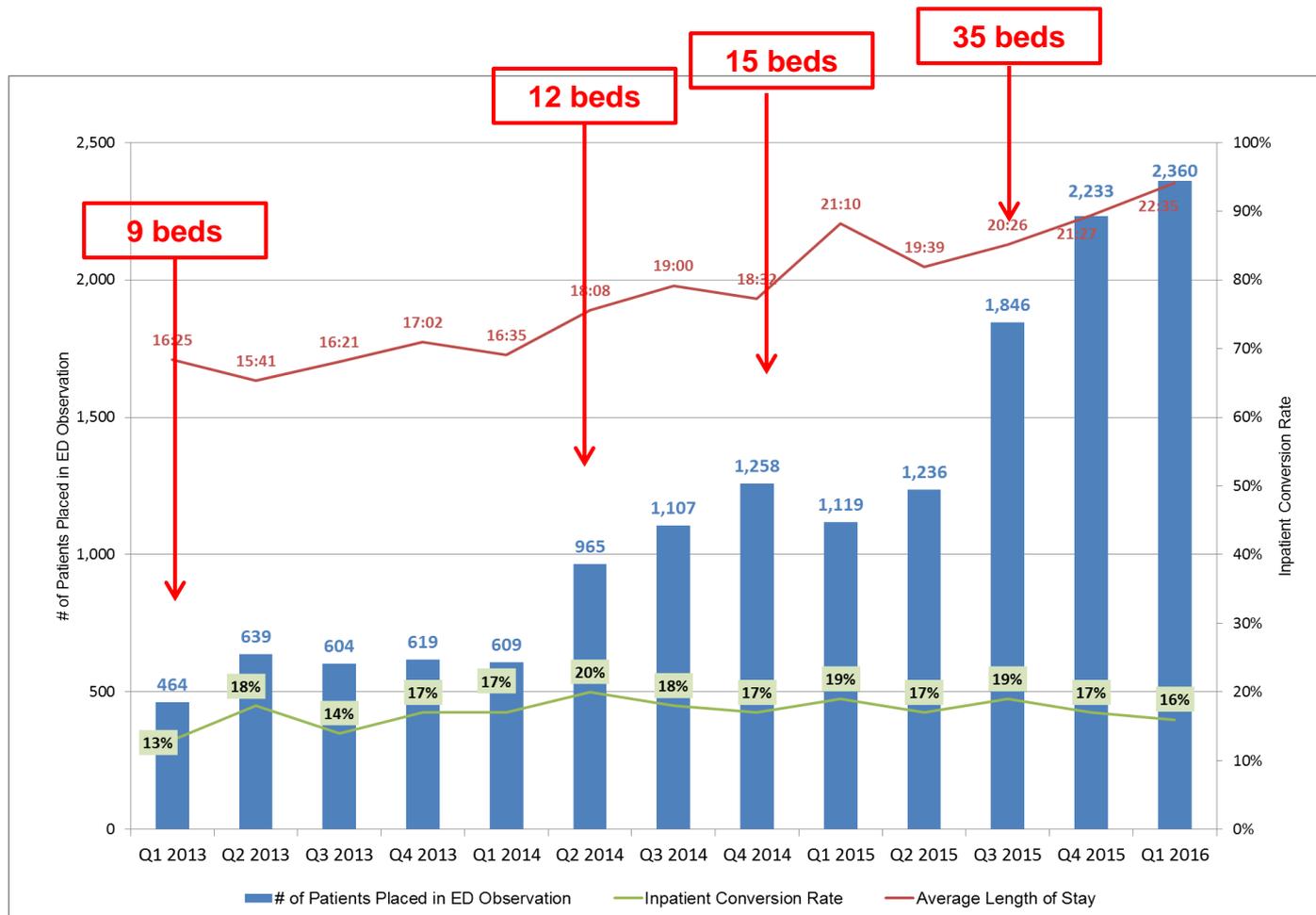
Freestanding ED



Urgent Care

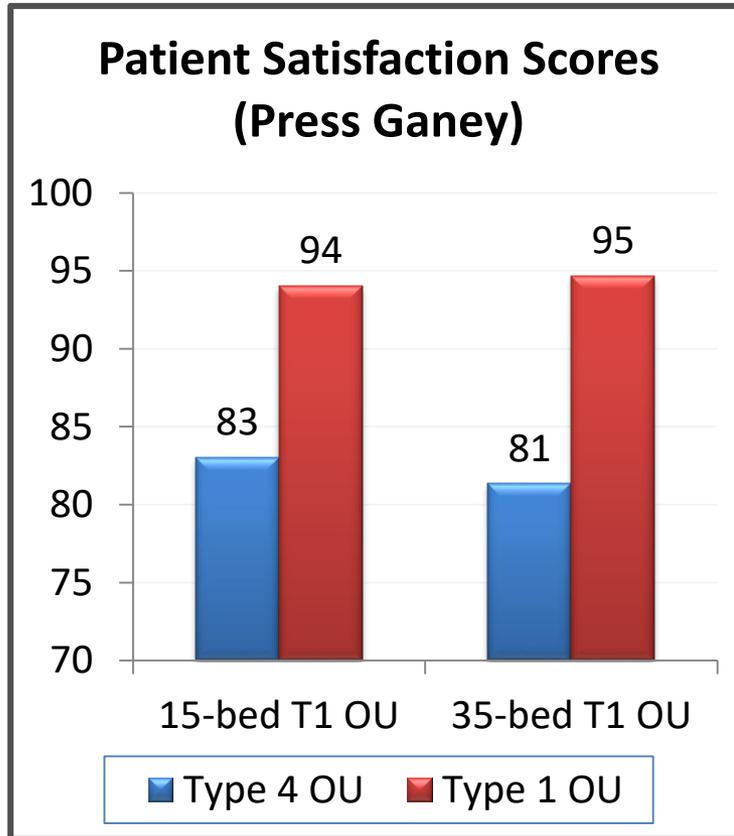


Consolidation of Observation Services into Type 1 Unit



- Consistent EDOU growth, innovation, clinical excellence
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Patient Satisfaction is Higher in a Type 1 OU



Patient satisfaction higher when observation services are provided in a Type 1 OU setting.

Observation Unit (Type 1) Patient Satisfaction Score Percentiles

(Press Ganey, 1 year sample)

Press Ganey Category	Percentile
Overall Rating	99 th
Nurses	99 th
Doctors	99 th
Overall Assessment	99 th
Likelihood of Recommending	99 th

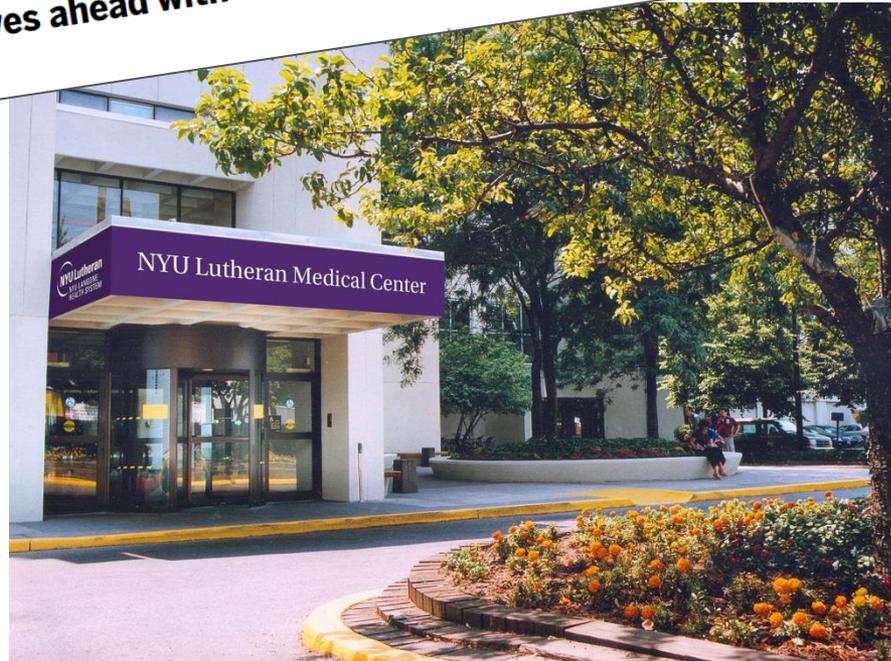
Patient satisfaction scores are in the highest (favorable) percentiles.



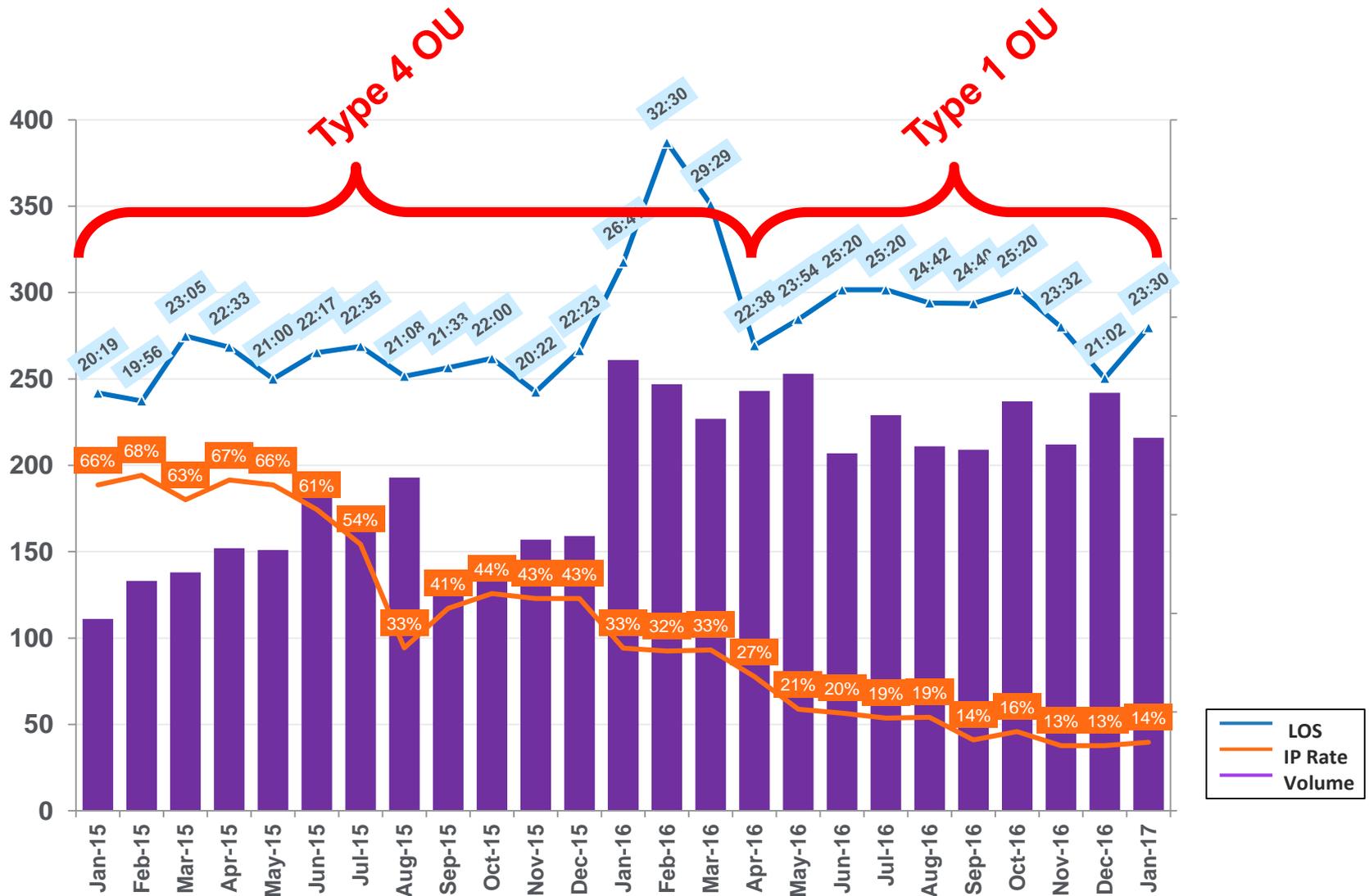
Necessity, Innovation

NEWS › HEALTH CARE
July 21, 2015 3:39 p.m. Updated 07/21/2015

NYU Langone moves ahead with Lutheran Medical Center merger



Type 1 vs Type 4 Observation Unit Performance



Restructuring delivery of observation into a type 1 observation unit resulted in performance metrics that are equal to or better than national benchmarks.

Post-discharge Follow-up Center

- All discharged patients called for follow-up within 12-72 hours based on risk
 - Staffed with RNs & APPs
 - Review of all lab/imaging results
 - Post-discharge reassessment
 - Patient education
 - Follow-up appointments
 - Transition of care to community
 - Provide feedback directly to the leadership team
- Designed to improve quality of care, reduce readmissions/revisits, and improve patient satisfaction.



Value-Based Management

- When observation services are provided in a dedicated, protocol-driven observation unit versus a scatter bed model, there is:
 - Improved length of stay per observation case
 - Improved observed-to-expected length of stay (O:E)
 - Improved charge capture per observation case

$$\textit{Value} = \textit{Quality}/\textit{Cost}$$

Necessity and Innovation: Observation Units in Novel Settings

Necessity in Healthcare

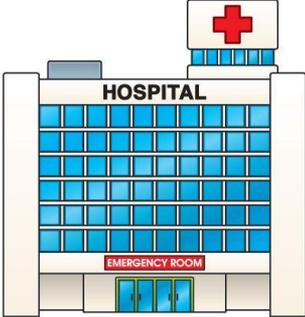
- Underserved
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Case Example

- 52 year-old male with a history of diabetes presents with erythema on the right leg, febrile to 101 at home. Vitals are currently stable. The exam is consistent with cellulitis (there is no suggestion for a worse underlying disease process). Point of care testing is unremarkable (ie. CBC, lactate, electrolytes, blood gas). You decide the patient requires IV antibiotics...



Necessity and Innovation: Observation Units in Novel Settings



Microhospital



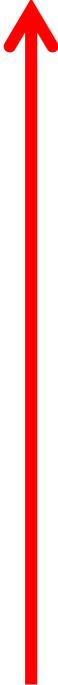
Freestanding ED



Telehealth



Home



Acuity
(and cost)

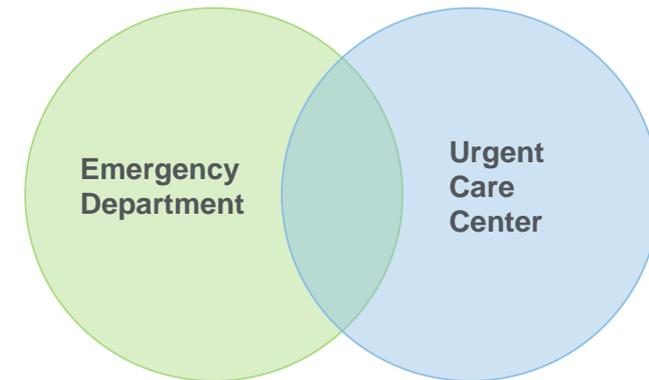
Urgent Care Centers

Urgent Care Centers

- > 10,000 urgent care (UC) centers in the United States by the end of 2017
- On average, each UC will treat approx 15,300 patients/year by 2021
 - 153 million UC patient encounters/year

An Urgent Care Center is:

- Walk-in, ambulatory medical facility
- Generally not open 24/7
- Not staffed or equipped to provide emergency care
- Variable in the range of care they can provide
 - Minor to urgent
 - Lab testing (ie. send-out vs point of care), Xray
 - **Can be confusing to patients**

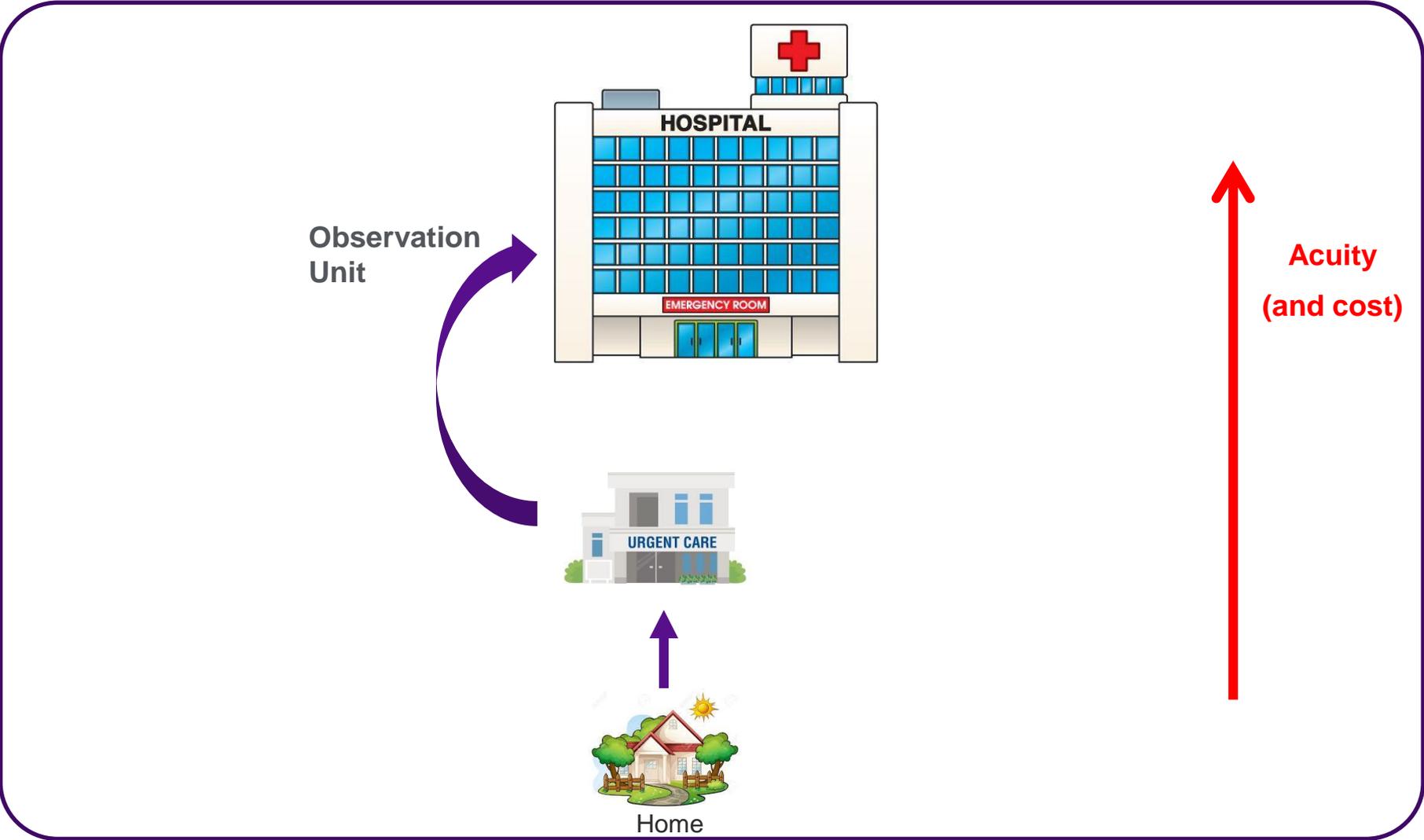


URGENT	or	Emergency
A condition that requires immediate care but is not life-threatening		A condition that is life- or limb-threatening
Common sprain		Chest pain 
Earache 		Facial drooping
Cold and flu		Head and eye injuries 
Sore throat 		Sudden numbness or weakness in arm or leg
Abrasion and cut requiring stitches		Uncontrolled bleeding and severe cuts
Urinary tract infection		Vaginal bleeding with pregnancy
Mild asthma		Coughing or vomiting blood 
Rash without fever		Sudden shortness of breath or difficulty breathing
Broken bone with intact skin and no obvious need to reset bone 		Rash with fever
		Major fracture that breaks the skin or needs to be reset 

Observation Care and Urgent Care Centers

- Observation care will be needed for some urgent care patients
 - Examples:
 - Urinary tract infection: intravenous antibiotics, antiemetics, analgesia, intravenous fluids
 - Cellulitis: intravenous antibiotics, analgesia
 - Pneumonia: intravenous antibiotics, analgesia, pulse oximetry, incentive spirometry
- Emergency department care may not always be needed

Innovative Observation Care



Freestanding Emergency Departments

Freestanding Emergency Departments

- Currently hundreds of FSEDs
- Recent growth driven by:
 - Innovations in technology (EHR, POC testing, telehealth)
 - Need for 24/7 care
 - Extend emergency services in new markets
 - Lower cost than building entire hospital

A Freestanding Emergency Department is:

- Separate/distinct (from hospital ED) facility providing emergency care
- Generally open 24/7 staffed with physician, RN, APP
- Capable of:
 - Labs (send-out and point of care)
 - Basic and advanced imaging (Xray, CT, ultrasound)
 - Specialty consultation (local specialist, telehealth)

Freestanding EDs in Healthcare Systems

- FSED patients will need observation care
- FSED/Observation Unit
 - Equip the FSED to care for the patient
 - Keep patients local
 - Preserve beds at the ‘main hospital campus’
 - Augment outpatient care/reduce unnecessary hospitalization
 - Triage patient requiring inpatient care to the right hospital at the right time
 - Multiple transfer agreements
 - Many states have examples of this model (ie. California, Colorado, Florida, Ohio, North Carolina)
- Direct placement from FSED to OU
 - Avoid sending patient to hospital-ED

Freestanding ED Obs Profile



	Volume	Conversion Rate	Length of Stay (hours)
Grand Total	942	12%	21

Only 12% of patients receiving observation care subsequently required inpatient admission.

Top 10 Protocols Account for 80% Freestanding ED Observation

Protocol
Chest Pain
General
Cellulitis
Abdominal Pain
Syncope
TIA
Asthma
Back Pain
Pneumonia
Transfusion

Focusing on these 10 protocols allows care for the majority of observation patients.

Freestanding ED Obs Unit

DIAGNOSTIC PROTOCOL	THERAPEUTIC PROTOCOL
Chest Pain	Cellulitis
Abdominal Pain	Abdominal Pain
Syncope	Asthma
TIA	Back Pain
	Pneumonia
	Transfusion

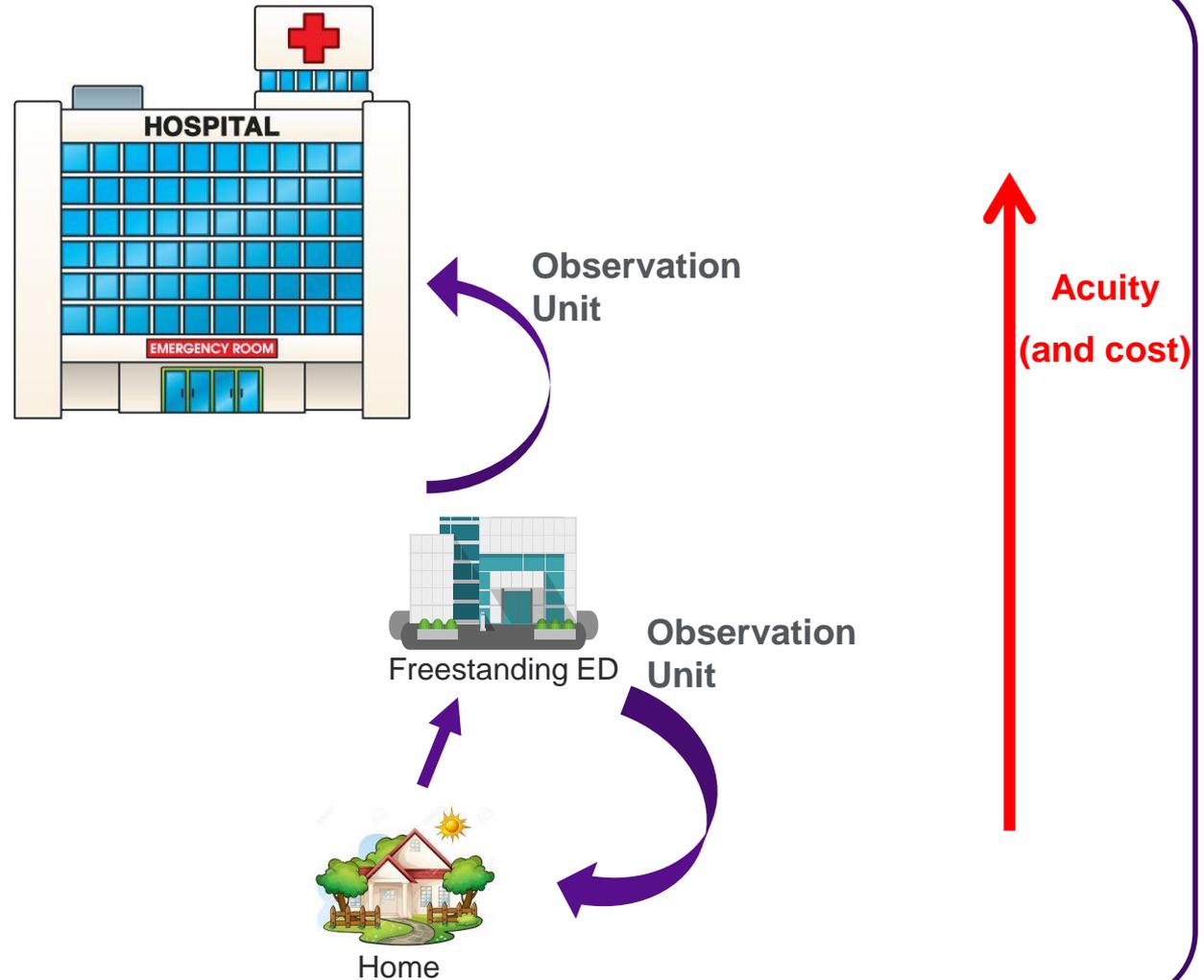
• Diagnostic Protocols

- Chest Pain: exercise stress, coronary CTA, stress echo
- Abdominal Pain: CT, Ultrasound
- Syncope: echo, telemetry
- TIA: CT, carotid doppler, +/- MRI/MRA

• Therapeutic Protocols

- Cellulitis: antibiotics
- Abdominal pain: analgesia, antiemetic, fluids, antacids
- Asthma: bronchodilators, steroids, peak flow, pulse ox, Xray
- Back pain: analgesia
- Pneumonia: antibiotics, pulse ox
- Transfusion: blood products

Innovative Observation Care

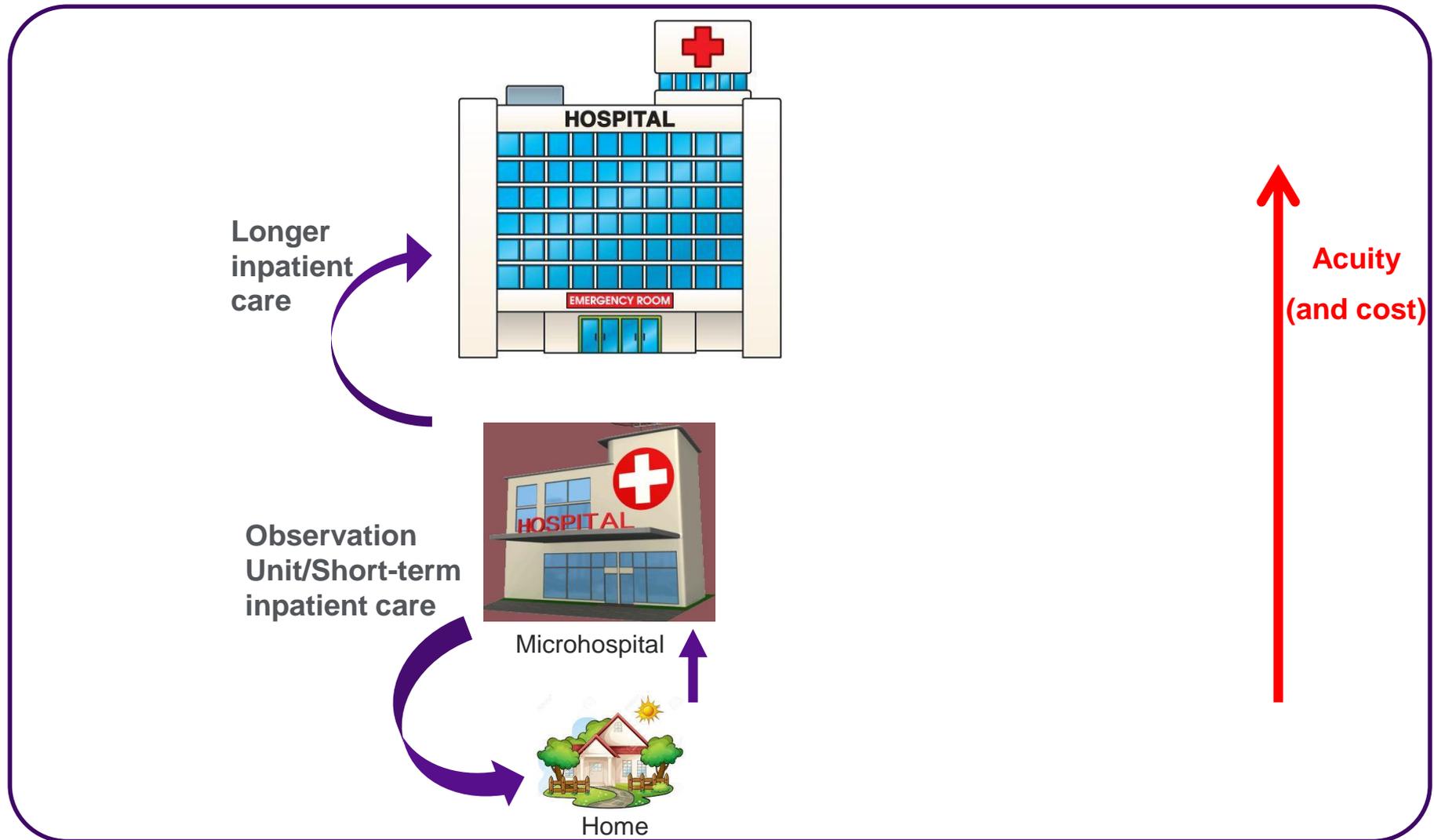


Microhospital

A Microhospital is:

- Small, 24/7 inpatient facilities, usually with comprehensive emergency services
 - Middle ground between ambulatory care centers and acute care hospital
 - More capabilities than a FSED or UC
 - Include inpatient beds (like a FSED with beds)
 - 12-16 bed hospital
- More common in some states (ie. Texas, Colorado, Nevada, Arizona)
- Right-size healthcare to needs of communities
 - ED – quicker access to local emergency care than traveling to distant hospital
 - Observation unit – cost-effective, efficient care for certain conditions, avoids need for transfer
 - Inpatient services – care for inpatient conditions, avoids need for transfer
 - Labs, radiology, diagnostics
 - Specialty consultation, telehealth

Innovative Observation Care



Innovation

- Emergency medicine is society's health care safety net
- Observation medicine extends this safety net through the delivery of short-term, acute care that is:
 - Flexible
 - Adaptive
 - Scalable
 - High-quality
 - Cost-effective
 - Value-based
 - Resource-sparing

Innovation: What started as a 9-bed simple OU in the wake of a natural disaster...

- Dedicated observation medicine attending physician group
- Multiple observation units
 - Observation Unit at NYU Langone Tisch
 - 35 bed, protocol-driven, dedicated observation unit
 - 33 evidence-based clinical protocols in use
 - Expanded 4-fold in size and 6-fold in quarterly volume since implementation
 - Observation unit at NYU Langone Brooklyn
 - 12 bed, protocol-driven, dedicated observation unit
 - 22 evidence-based clinical protocols in use
- Freestanding ED
- Urgent Care
- ?Inpatient care...



THANK YOU

I hope to hear from you!

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