

Observation Medicine: Past, Present, and Future

MCEP Observation Medicine: Science and Solutions 2017
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Michael A. Ross MD FACEP
Professor of Emergency Medicine
Emory University School of Medicine
Medical Director – Observation Medicine
Atlanta, Georgia

Disclosure of Commercial Relationships:

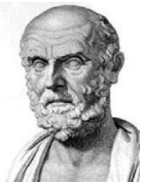
<i>• Nature of Relationship</i>	<i>Name of Commercial Entity</i>
• Advisory Board	None
• Consultant	None
• Employee	None
• Board Member	None
• Shareholder	None
• Speaker's Bureau	None
• Patents	None
• Other Relationships	ACC Accreditation Management Board Co-chair, ACEP E-QUAL Chest Pain (CMS TCPI) Past CMS APC Advisory Panelist Chair – Visits and Observation Subcommittee

Topics

- A. Past - leaders, definitions, science, and shifts
- B. Present – leaders, trends, scope, benefits, and coming of age
- C. Future – leaders, visions, policy, clinical practice, and big needs

A. The Past . . .

“Leave nothing to chance, overlook nothing: combine contradictory observations and allow enough time . . . A great part, I believe, of the art is to be able to observe”



“Leave nothing to chance, overlook nothing: combine contradictory observations and allow enough time . . . A great part, I believe, of the art is to be able to observe”

. . . Hippocrates 410 B.C.

Past leaders...



What is Observation Medicine?

... The *principle*

- What defines Emergency Medicine?
 - TIME (acuity)
 - What defines Observation Medicine?
 - TIME (acuity)
 - What defines Observation Patients?
 - TIME (acuity)
 - ED LOS for admitted patients = 5 hours
 - IP LOS for admitted patients = 5 days
 - Penalties for short IP LOS? < 24 hours
- What about patients needing **6-24 hours** of care???



History, Principles, and Policies of Observation Medicine

Emerg Med Clin N Am 35 (2017) 50–518
<http://dx.doi.org/10.1016/j.emc.2017.03.001>

Michael A. Ross, MD^a, Michael Granovsky, MD^{a,pmc} / 0733-8627/17/ © 2017 Elsevier Inc. All rights reserved.

Box 1

Principles of observation medicine

1. Focused patient care goals - a well-defined condition-specific patient care goal defined at the time of initiating observation services. Condition-specific guidelines specify patient selection for the observation unit interventions, and criteria for discharge or admission from the ED/OU.
2. Limited duration and intensity of service - the average length of stay of observation patients is 15 hours to 18 hours. Patients requiring a higher intensity of service are generally admitted.
3. Appropriate hospital setting - optimal clinical, operational and economic outcomes occur in a type 1 setting as proximate to the ED as possible.
4. Appropriate staffing - appropriate staffing levels of nurses, ancillary, associate providers, and physicians is essential as is administrative oversight.
5. Providing ongoing care in an outpatient setting - clinical guidelines, care pathways and protocols fall under 2 broad categories: ADPs (eg chest pain) and accelerated treatment protocols (eg asthma).
6. Intensive review - critical metrics must be collected to assure that benchmark targets are being achieved, for example, discharge rates (70–80%), length of stay (1–18 hours), and financial metrics. These targets are tracked for the whole ED/OU and for specific clinical conditions.
7. Economical service - to be successful, an ED/OU must be cost-effective and equitable for all involved. Equitability should include the hospital, the physician and those paying for these services.

What is Observation Medicine?

... the "Service":

OUTPATIENT OBSERVATION SERVICES

- **Observation services** are those services furnished on a hospital's premises, including use of a bed and periodic monitoring by nursing or other staff, which are reasonable and necessary to evaluate an outpatient's condition or determine the need for a possible admission as an inpatient...

Medicare: Hospital Manual, 3663

To determine the need for inpatient admission. . .

What is an inpatient? - The "2-Midnight Rule" Definition

- A 2-midnight **benchmark**: FOR **DOCTORS**
 - An inpatient is expected to stay in the hospital at least two midnights:
 - 24 hours and 1 minute, or 47 hours and 59 minutes
 - Outpatient time (ED or observation) counts
 - Inpatient stays < 2-MN not paid as an inpatient
 - except death, transfer, AMA, etc
- A 2-midnight **presumption**: FOR **REVIEWERS**
 - If a patient met benchmark criteria, the admission will not be scrutinized by reviewers (RAC, MAC, etc)

What is Observation Medicine?

... The "Setting":

- Management **"to determine the need for inpatient admission"**
- Target – 70-90% discharge within 15-18 hours
- Setting – a protocol driven observation unit (type 1 setting)

EXHIBIT 1

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

The Observation Unit: ... a dynamic setting

**Driven by innovations in science, health care, and economic forces.
Conditions will enter and leave the observation unit over time. . .**

Management of Observation Units

Case study: Chest Pain 1988

[This paper was developed by the ACEP Practice Management Committee, American College of Emergency Physicians, Management of observation units. Ann Emerg Med December 1988;17:1368-1372]

Sickle cell pain crisis	Abdominal pain: rule-out acute abdomen
Asthma	Mild alcohol withdrawal
Allergic reaction	Seizure disorder requiring phenytoin loading
Mild/moderate dehydration	Stable thoracic stab wound with initial normal chest radiograph
Renal colic	Stable abdominal stab wound with initial negative peritoneal lavage
Minor head trauma	
Certain drug overdoses	
Selected toxic inhalations	

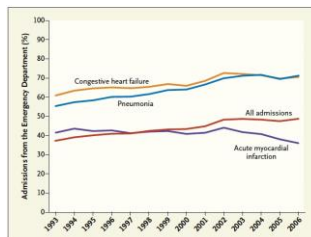
FIGURE 1. Acceptable admission criteria.

FIGURE 2. Unacceptable admission criteria.

Critically ill	Dying
Rule-out myocardial infarction	Psychotic
Rule-out pulmonary embolism	Fecal impaction
Coma	

The Observation Unit: ... a dynamic setting

- 1999 ACEP Policy – **Chest Pain restriction removed**
 - Care shifted from an inpatient to an outpatient setting



Proportion of U.S. Hospitalizations in Which Patient Was Admitted through the Emergency Department, 1993-2006.

The Growing Role of Emergency Departments in Hospital Admissions

Jeremiah D. Schuur, M.D., M.H.S., and Arjun K. Venkatesh, M.D., M.B.A.

N ENGL J MED 367:5 NEJM.ORG AUGUST 2, 2012

Decline in inpatient admissions for symptoms related to AMI attributed to ED chest pain protocols

The Observation Unit: ... a dynamic setting

JAMA Internal Medicine | Original Investigation

Cardiovascular Testing and Clinical Outcomes in Emergency Department Patients With Chest Pain

Alexander T. Sandhu, MD, MS, Paul A. Heidenreich, MD, MS, Jay Bhattacharya, MD, PhD, M. Kate Bundorf, PhD JAMA Internal Medicine August 2017 Volume 177, Number 8

[Invited Commentary](#)

LESS IS MORE

Cardiac Testing After Emergency Department Evaluation for Chest Pain

Time for a Paradigm Shift?

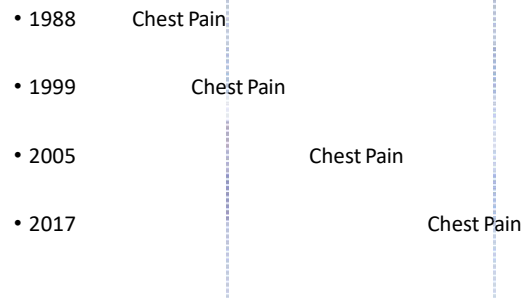
Benjamin C. Sun, MD, MPP, Rita F. Redberg, MD, MSc JAMA Internal Medicine August 2017 Volume 177, Number 8

- “We strongly advocate for randomized clinical studies that will provide definitive guidance for this prevalent, high-risk, and vexing clinical problem.”

What is Observation Medicine? ... a dynamic "Setting"

- A "box" which conditions enter and leave over time. . .

• Inpatient Observation Unit Outpatient



Why the shift???

- Driven by payer policy? An "insurance status"?
- Driven by malpractice risk?
- Driven by provider behavior?
- Driven by a random sequence of events?

Observation Medicine Research: Drives changes in Observation Medicine

- 1960s – Growth of EDs. **First Observation Units** described
- 1980s – **Initial Chest Pain** background research.
 - Novel studies in pediatrics, geriatrics, trauma, asthma, abdominal pain.
- 1990s – **Landmark RCTs** (AHCPR) show efficacy of ADPs for **Chest Pain** and ATPs for **Asthma**.
 - 1998 - SCPC forms.
- 2000 – 2010 - Landmark RCTs of **Syncope, TIA, Atrial Fibrillation**.
 - Novel studies in the elderly, as well as the impact of an EDOU on hospitals.
- 2010 – 2017 – Health Services Research focuses on the impact of obs units on **hospitals, health systems, and policy**.
 - Studies describing which chest pain patient do not need observation
- 2008 ACEP Policy on ED Observation Units . . . a new line in the sand

REVIEW ARTICLE

State of the Art: Emergency
Department Observation Units

Michael A. Ross, MD, Terence Antonio, MD, F Lewis Grubb, MD, F Perum Suresh, MD, F
Rachel O'Malley, MD, F Akronika Gyo, MD, F Steve Bohan, MD, and Carol Clark, MD***

Condition / Year / Author	N	Primary Outcome
1. Syncope / 14 / Sun *	124	↓ admissions and LOS
2. Chest Pain / 10 / Miller *	110	↓ Cost (stress MRI)
3. Atrial Fib / 08 / Decker	153	↑ conversion to sinus
4. TIA / 07 / Ross	149	↓ LOS and cost
5. Syncope / 04 / Shen	103	↑ established diagnosis, ↓ admissions
6. Asthma / 97 / McDermot	222	↓ admissions, no relapse ↑
7. Chest Pain / 98 / Farkouh	424	No difference cardiac events
8. Chest Pain / 97 / Roberts	165	↓ LOS and cost
9. Chest Pain / 96 / Gomez	100	↓ LOS and cost

*(Crit Pathways in Cardiol 2012;11: 128–138) *Added since published after this review*

Is “Observation Medicine” simply describing an insurance status?

No!

It is based on a growing body of literature that conforms to contemporary scientific evidence and medical practice.

Policy Statements

Policy statements and clinical policies are the official policies of the American College of Emergency Physicians and, as such, are not subject to the same peer review process as articles appearing in the journal. Policy statements and clinical policies of ACEP do not necessarily reflect the policies and beliefs of *Annals of Emergency Medicine* and its editors.

Emergency Department Observation Services

Revised and approved by the ACEP Board of Directors January 2008. [Ann Emerg Med. 2008;51:686.]

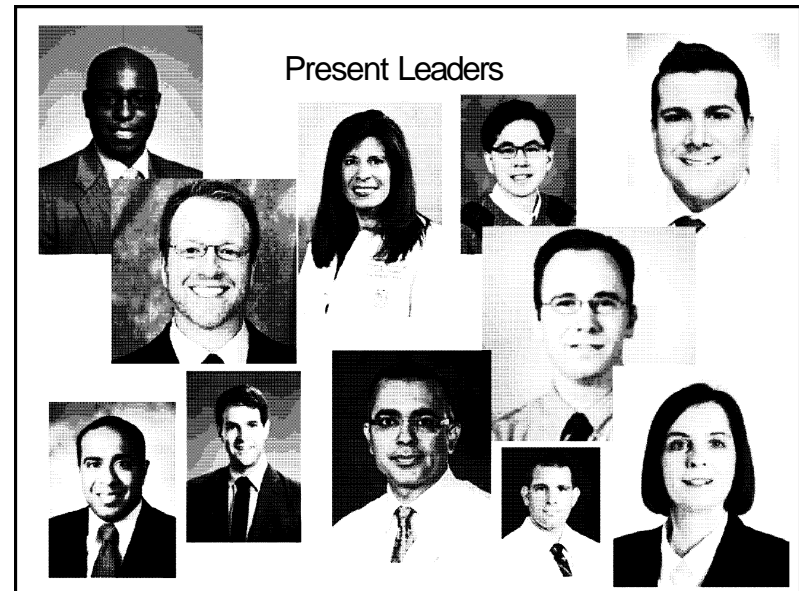
Emergency department (ED) patients frequently require services beyond their initial ED care to determine the need for inpatient admission. These distinct and reimbursable services may include but are not limited to: further diagnostic evaluation, continued therapy or management of acute psycho-social issues.

To promote quality of care and patient safety for ED observation patients, the American College of Emergency Physicians (ACEP) supports the following principles:

- *Observation of appropriate ED patients in a dedicated ED observation area, instead of a general inpatient bed or an acute care ED bed, is a “best practice” that requires a commitment of staff and hospital resources.*
- An emergency physician and emergency nurse should direct ED observation areas with clearly defined administrative responsibilities for the unit.
- Written policies and procedures for the ED observation area should be approved by appropriate ED and hospital medical staff representatives.
- ED observation area policies and procedures should address the following:
 - Patient criteria for admission into the unit, discharge from the unit, and admission to an inpatient bed;
 - A clear statement of which physician bears clinical responsibility for each patient in the area;
 - A clear delineation of emergency physician and nursing staff roles and responsibilities throughout the day – including how care will be transferred between providers.
- Circumstances that require notification of the physician who is responsible for the patient; Maximum allowable length of stay in the unit and means to address outliers; and
- A description of how utilization and relevant quality measures will be monitored and reported.
- ED observation areas should have adequate space, staffing, equipment, and supplies appropriate for the conditions being managed.
- Mechanisms should be in place to expedite the discharge or the transfer of patients to an inpatient bed, when appropriate.

B. The Present

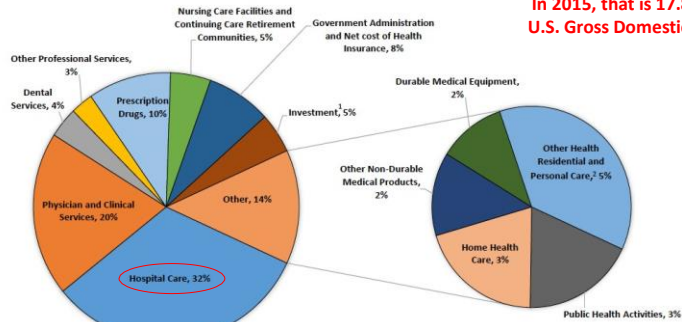
1. Leaders
2. Trends
3. Scope
4. Benefits
5. Coming of age



Background: U.S. Health System

THE NATION'S HEALTH DOLLAR (\$3.2 TRILLION), CALENDAR YEAR 2015, WHERE IT WENT

Note to self: In 2014 it was 3.0 trillion
In 2015, that is 17.8% of the U.S. Gross Domestic Product

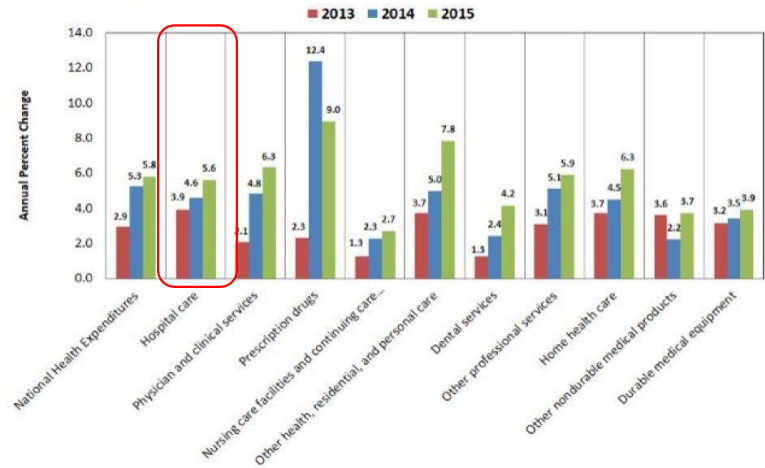


¹ Includes Noncommercial Research (2%) and Structures and Equipment (3%).

² Includes expenditures for residential care facilities, ambulance providers, medical care delivered in non-traditional settings (such as community centers, senior citizens centers, schools, and military field stations), and expenditures for Home and Community Waiver programs under Medicaid. Note: Sum of pieces may not equal 100% due to rounding.

SOURCE: Centers for Medicare & Medicaid Services, Office of the Actuary, National Health Statistics Group.

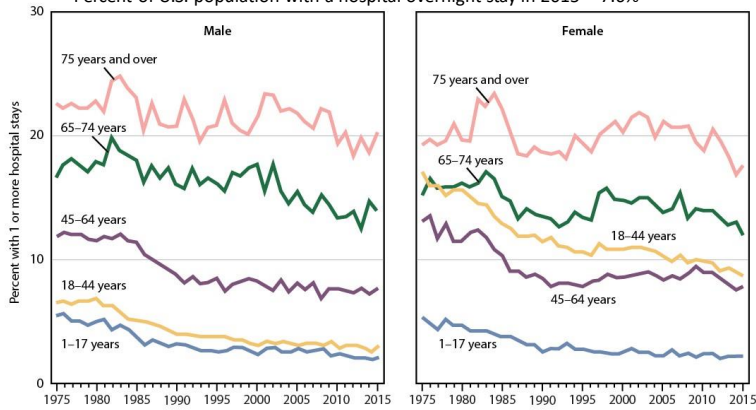
Annual Growth in Spending by Type of Good and Service, 2013-2015



SOURCE: Centers for Medicare & Medicaid Services, Office of the Actuary, National Health Statistics Group.

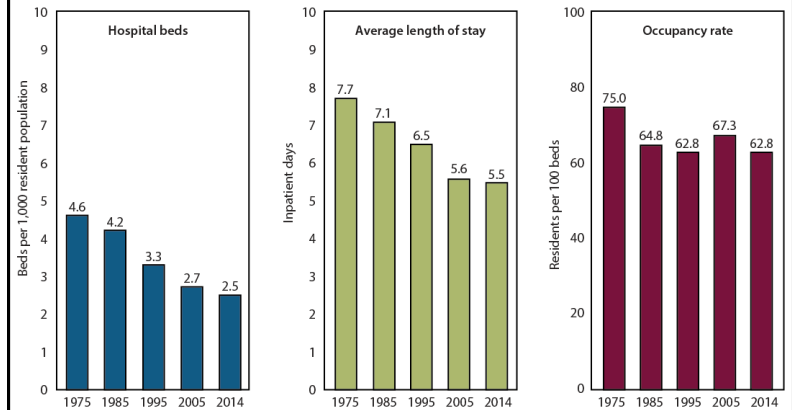
Hospitalization rates declining: CDC NCHS – 1975 - 2015

• Percent of U.S. population with a hospital overnight stay in 2015 = 7.6%



SOURCE: NCHS, *Health, United States, 2016*, Figure 18. Data from the National Health Interview Survey (NHIS).

Hospital beds and length of stays declining: CDC NCHS 1975 - 2014



SOURCE: NCHS, *Health, United States, 2016*, Figure 20. Data from the American Hospital Association (AHA).

Why the shift from inpatient to outpatient

- Innovations in medical science
- Innovations in clinical practice
- Payer policy driven to control health costs
- Patient driven desire to not be hospitalized
- Contracting hospital beds in the face of an expanding Medicare population

3. Scope of Observation Services in the U.S.

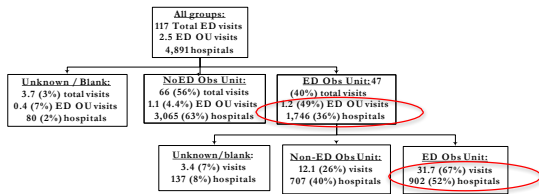
1. What percent of patients staying in the hospital following an ED visit are "observation" status?
2. What percent of U.S. Hospitals have an observation unit?
3. What percent of U.S. Emergency Medicine Residencies include training in Observation Medicine?

1. How many patients are observed following an ED visit?

National Study of Emergency Department Observation Services

Jennifer L. Wiler, MD, MBA, Michael A. Ross, MD, and Adit A. Ginde, MD, MPH

ACADEMIC EMERGENCY MEDICINE 2011; 18:3-7 © 2011 by the Society for Academic Emergency Medicine



- ED dispositions:
 - 15% = Admit to hospital or EDOU
 - 2% = EDOU
 - 2% = <48hr hosp. ("Short stay")
 - 11% = >48 hr hosp.
- 4/15 = 26%

BRIEF REPORT

The Shifting Landscape in Utilization of Inpatient, Observation, and Emergency Department Services Across Payers

Teryl K. Nuckols, MD, MSHS^{1,2}, Kathryn R. Fingar, PhD, MPH², Marguerite Barrett, MS¹, Claudia A. Steiner, MD, MPH², Carol Stocks, PhD, RN², Pamela L. Owens, PhD²

AHRQ HCUP claims data:

- 4 states – Ga, Nb, SC, Tn
- 2009–2013
 - All ED, Obs, Inpatient claims
 - Rates per 100,000
- Focused on top ten conditions:
 - heart failure, bacterial pneumonia, chronic obstructive pulmonary disease, asthma, dehydration, urinary tract, infection, uncontrolled diabetes, diabetes with long-term complications, diabetes with short-term complications, and hypertension
 - Represent >20% of general Medicine admissions
- Trends:

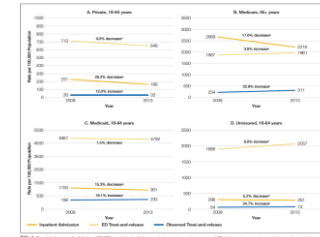


FIG. 1. Trends in the rate of admission to 100 ED conditions with most and most dramatic changes and ED rates relative to hospital and inpatient admission rates, 2009-2013.

- Inpatient admissions declined
- ED discharges increased:
 - ED – home
 - ED – obs – home: did not fully account for decline in IP admits
- Inpatient admissions preceded by an obs visit increased across all payers

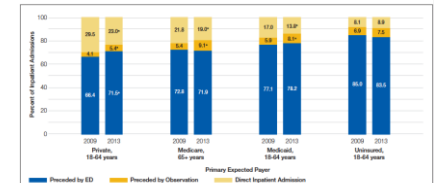


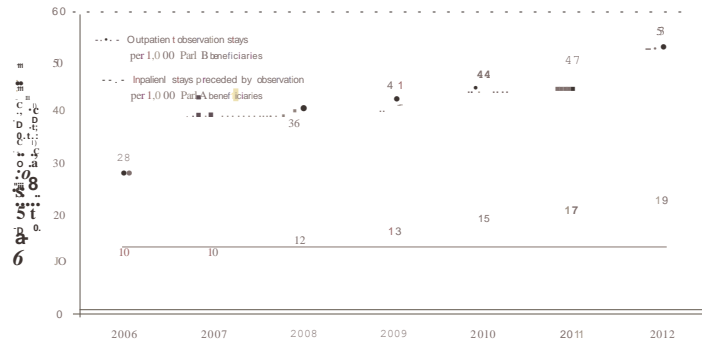
FIG. 2. Trends in the proportion of payer admissions for 10 ED conditions with most and most dramatic changes and ED rates relative to hospital and inpatient admission rates, 2009-2013.

MEdpAC

Report to the Congress: Medicare and the Health Care Delivery System June 2015

FIGURE 7-1

Outpatient observation stays and inpatient stays preceded by observation per beneficiary increased between 2006 and 2012



Source: Medicare inpatient and outpatient 2012 standard analytic file claims.

Observation admissions CDC NHAMCS survey data - 2013

Disposition	Number of visits in thousands ¹		Percent of visits	
	(standard error in thousands)	(7,753)	(standard error of percent)	(standard error of percent)
All visits	130,353	(7,753)	---	---
Admitted, transferred, or died				
Admit to this hospital	12,170	(977)	9.3	(0.7)
Critical care unit	1,516	(173)	1.2	(0.1)
Stepdown or telemetry unit	487	(135)	0.4	(0.1)
Operation room	636	(119)	0.5	(0.1)
Mental health or detoxification unit	450	(88)	0.3	(0.1)
Cardiac catheterization lab	257	(89)	*0.2	(0.1)
Other bed or unit	7,119	(658)	5.5	(0.5)
Unknown or blank	1,705	(333)	1.3	(0.2)
Admit to observation unit	2,270	(376)	1.7	(0.3)
Then hospitalized	594	(128)	0.5	(0.1)
Then discharged	1,675	(317)	1.3	(0.2)
Return or transfer to nursing home	742	(101)	0.5	(0.1)
Transfer to psychiatric hospital	629	(87)	0.5	(0.1)
Transfer to other hospital	2,193	(209)	1.7	(0.1)
Dead in emergency department ²	303	(81)	0.2	(0.1)
Outpatient follow-up				
Return or refer to physician or clinic for follow-up	90,005	(6,534)	68.0	(1.9)
No follow-up planned	16,067	(2,295)	12.3	(1.7)
Left prior to completing visit				
Left before triage	421	(63)	0.3	(0.0)
Left after triage	1,573	(218)	1.2	(0.1)
Left against medical advice	1,199	(139)	0.9	(0.1)
Other	2,988	(595)	2.3	(0.5)

2. Percent of hospitals that have an obs unit CDC NHAMCS survey data 2011

Table 27. Hospital and emergency department characteristics, by emergency department visit volume and metropolitan status, United States, 2011

Hospital and ED characteristics	ED annual visit volume					
	Metropolitan area			Not metropolitan area		
	Total ¹	Fewer than 20,000	20,000 to 49,999	50,000 or more	Metropolitan area	Not metropolitan area
	Percent distribution (standard error)	Percent distribution (standard error)	Percent distribution (standard error)	Percent distribution (standard error)	Percent distribution (standard error)	Percent distribution (standard error)
All EDs	100.0	100.0	100.0	100.0	100.0	100.0
Hospital characteristic						
Number of days in week that elective surgeries are scheduled:						
0-4	13.0 (3.7)	29.4 (7.8)	*0.1 (0.1)	*3.4 (2.0)	*8.2 (3.8)	*22.1 (7.4)
5	79.2 (4.4)	54.3 (8.4)	88.0 (3.1)	88.1 (5.9)	71.0 (4.8)	68.6 (8.3)
6-7	10.3 (2.4)	*10.5 (4.7)	*6.7 (2.1)	17.6 (4.5)	14.6 (3.5)	*2.1 (2.0)
Unknown or blank	*6.5 (2.0)	*5.8 (3.5)	*5.2 (2.4)	*10.9 (4.0)	*6.3 (2.1)	*7.1 (4.4)
Has bed coordinator:						
Yes	66.2 (4.5)	42.2 (8.0)	80.9 (4.3)	88.7 (3.9)	77.8 (4.3)	44.0 (8.2)
No	28.8 (4.5)	48.0 (8.6)	13.7 (3.6)	*7.2 (3.0)	18.4 (3.8)	46.7 (9.0)
Unknown or blank	*7.0 (2.6)	*9.8 (5.7)	*5.4 (2.3)	*4.1 (2.7)	*5.8 (2.6)	*9.3 (5.9)
How often hospital bed census data are available:						
Instantaneously	79.8 (3.3)	86.6 (5.6)	73.4 (4.6)	78.3 (4.4)	71.7 (4.2)	95.3 (3.3)
Every 4 hours	*4.0 (1.6)	*3.1 (2.9)	*4.8 (2.6)	*4.3 (2.2)	*5.5 (2.4)	*1.1 (1.2)
Every 6-12 hours	*2.2 (1.3)	-	*4.8 (3.1)	*1.8 (0.9)	*3.4 (1.9)	-
Every 24 hours	6.4 (1.9)	*5.9 (3.1)	*6.5 (2.9)	*7.4 (3.3)	7.9 (2.3)	*3.6 (3.0)
Other	*0.5 (0.3)	-	*1.2 (0.8)	*0.4 (0.4)	*0.8 (0.5)	-
Unknown or blank	7.0 (2.0)	*4.4 (3.4)	*6.4 (3.0)	*7.9 (3.2)	*10.7 (2.9)	-
ED characteristic						
ED uses electronic medical records						
Yes, all electronic	48.9 (5.0)	33.8 (8.4)	59.9 (5.3)	59.4 (5.8)	51.5 (4.9)	43.9 (10.6)
Yes, part electronic	34.8 (3.8)	41.2 (7.1)	29.1 (5.1)	32.5 (5.2)	33.1 (4.3)	38.1 (6.9)
No	14.6 (3.3)	*21.7 (7.0)	11.0 (3.0)	*6.3 (4.4)	12.8 (2.9)	*18.0 (7.6)
Unknown or blank	*1.7 (1.4)	*3.4 (3.3)	-	*11.8 (1.8)	*9.7 (2.1)	-
Has observation or clinical decision unit						
Yes	20.7 (3.5)	*18.3 (6.4)	20.3 (5.2)	27.0 (4.8)	20.7 (3.9)	*20.8 (7.7)
No	75.2 (3.6)	77.6 (8.8)	75.9 (5.6)	68.0 (4.8)	73.4 (4.0)	78.6 (7.7)
Unknown or blank	*4.1 (1.8)	*3.9 (3.3)	*3.8 (2.5)	*5.0 (2.5)	*5.9 (2.6)	*0.6 (0.6)
Admitted patients were ever boarded 2 or more hours in the ED while waiting for an inpatient bed						
Yes	62.4 (4.1)	31.6 (7.1)	83.3 (4.0)	86.7 (3.7)	76.1 (4.5)	36.0 (8.2)
No	32.5 (4.3)	63.6 (7.4)	*9.5 (2.9)	*11.4 (3.5)	18.2 (3.8)	59.9 (8.5)
Unknown or blank	*5.2 (1.9)	*4.8 (3.4)	*7.2 (3.8)	*1.9 (1.1)	*5.7 (2.7)	*4.1 (3.0)
If ED is critically overcrowded, admitted patients are boarded in inpatient hallways or in another space outside the ED						
Yes	20.0 (2.8)	*17.0 (5.5)	18.2 (4.2)	30.8 (5.2)	23.0 (3.2)	*14.3 (5.2)
No	73.1 (4.0)	72.5 (8.2)	79.5 (4.7)	60.9 (6.3)	68.6 (4.2)	81.5 (7.2)

3. How many E.M. residencies have training in Observation Medicine?

• Survey of all E.M. residencies in 2000 to evaluate observation unit (OU) prevalence, emergency medicine (EM) resident exposure in observation medicine (OM), EM faculty/residency director (RD) OM training, and RD attitudes toward OM.

• RESULTS:

- **36.1% have OUs**
- **44.9% plan to have an OU.**
- **Observation medicine resources included:**
 - Textbooks **32.0%**
 - Articles **45.9%**
 - Lectures **36.9%**
 - Fellowships **2.5%**
 - Research **26.2%**
- **Observation medicine patient care occurs**
 - **1) during residency: 25.4% of RDs, 11.3% of entire faculty**
 - **2) as an attending: 45.1% of RDs**

• **CONCLUSIONS:** Nearly two-thirds of EM programs have or are planning an OU. Resources are lagging behind. This survey describes current OM education strategies to teach OM.

Mace, S. E. and J. Shah (2002). "Observation medicine in emergency medicine residency programs." *Acad Emerg Med* 9(2): 169-171

4. Major Benefits

- Local - What is the impact of type 1 EDOU on hospitals in terms of:
 - Cost reduction
 - Revenue enhancement
- National - What is the potential impact of type 1 EDOUs on the U.S. health care system?
- Providers

TEST CASE: TIA

NEUROLOGIC/ORIGINAL RESEARCH

An Emergency Department Diagnostic Protocol for Patients With Transient Ischemic Attack: A Randomized Controlled Trial

Michael A. Riese, MD¹ From the Department of Emergency Medicine, William Beaumont Hospital, Royal Oak, MI (Riese, Smith, Compton, PhD); Michael J. Fitzgerald, MD, PhD² From the Department of Emergency Medicine, Wayne State University School of Medicine, Detroit, MI (Riese, Compton, O'Neil); Patrick Modylos, BS

[Ann Emerg Med. 2007;50:109-119.]

RCT of 149 TIA patients (type 1 vs 3 setting):

- Cost: \$890 vs \$1,548
- LOS: 25.6hr vs 61.2hr

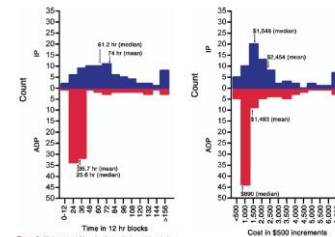


Figure 3. Histograms of length of stay (in hours) by study group. IP—Patients were randomized to the inpatient course. Accelerated diagnostic protocol refers to patients randomized to the transient ischemic attack–accelerated diagnostic protocol course.

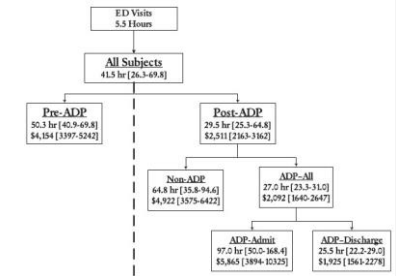
Figure 4. Histogram of inpatient total direct cost by study group. IP—Patients were randomized to the inpatient course. Accelerated diagnostic protocol refers to patients randomized to the transient ischemic attack–accelerated diagnostic protocol course.

Impact of an Emergency Department Observation Unit Transient Ischemic Attack Protocol on Length of Stay and Cost

Fadi Nahab, MD,¹ George Leach, MD,[†] Carlene Kingston, MD,² Osman Mir, MD,[‡] Jerome Abramson, MD,[§] Sarah Hilton, MSIS,[†] Matthew Keadey, MD,[†] Bryce Gartland, MD,[¶] and Michael Ross, MD[¶]
Journal of Stroke and Cerebrovascular Diseases, Vol. ■, No. ■ (■-■), 2011; pp 1-6

Before-After study of 142 TIA patients (type 1 vs 4 setting):

- Cost: \$2,092 vs \$4,154
- LOS: 27.0hr vs 50.3hr



By Christopher W. Baugh, Arjun K. Venkatesh, Joshua A. Hilton, Peter A. Samuel, Jeremiah D. Schuur, and J. Stephen Bohan

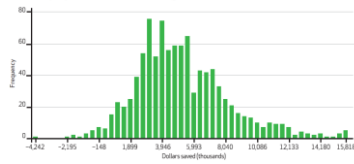
Making Greater Use Of Dedicated Hospital Observation Units For Many Short-Stay Patients Could Save \$3.1 Billion A Year

OCTOBER 2012 VOL 31 | HEALTH AFFAIRS

Estimates:

- Savings per hospital: \$4.6 million
- Savings per patient: \$1,572

EXHIBIT 3
Simulated Frequency Distribution Of Annual Cost Savings At The Institutional Level, 2012



Source: Authors' analyses of Monte Carlo simulations, based on 1,000 Monte Carlo simulations. Only selected dollar savings values are shown, because of space constraints. Mean \$4.6 million (standard deviation = \$2.9 million).

Estimating Observation Unit Profitability with Options Modeling

Christopher W. Baugh, MD, MB, J. Stephen Bohan, MD, MS

ACADEMIC EMERGENCY MEDICINE 2008; 15:445-452

Table 3
Inpatient Revenue and Cost Summary

Condition	Diagnosis-related Group (DRG)	DRG Payment(\$)	Hospital Cost(\$)	Average LOS (Days)	Net Profit (Loss) per Hospital day	Net Profit (Loss) per Hospital day
Observation						
Chest pain/ cardiac	140/143	2,410.64	3,553.30	2.25	(1,142.66)	(507.85)
GI/abdominal	183/189	2,673.67	3,961.01	3.00	(1,287.34)	(429.11)
Asthma/respiratory	80/88/97/100/102	3,161.17	4,467.90	3.64	(1,286.73)	(356.24)
General - all mental/medical	278/421	3,192.28	4,370.15	4.00	(1,177.87)	(294.47)
Dehydration	297	2,202.96	3,285.57	3.00	(1,082.61)	(360.87)
Psychiatric/ social services	425/430/432	4,728.77	4,933.13	6.77	(192.36)	(26.95)
Syncope/ near syncope	142	2,772.34	5,070.73	2.50	(2,298.39)	(919.36)
Congestive heart failure	127	5,376.35	6,740.41	5.10	(1,364.06)	(267.46)
Head injuries	23/32	3,035.09	4,798.48	2.85	(1,763.39)	(618.73)
Kidney problems	321/326/332	2,551.28	3,728.88	3.10	(1,177.60)	(379.87)
Average		3,210.25*	4,487.55*	3.62*	(1,277.30)	(416.09)
Transfer						
Post-cardiopulmonary arrest	129/144	6,283.29	5,565.64	4.15	717.65	172.93
Overdose	449/450	3,168.60	3,136.22	2.85	32.38	11.36
Acute respiratory failure	67/69/101/105	9,102.39	7,494.39	6.10	1,608.00	263.61
Abdominal catastrophe	154/164/165/170/478	14,893.20	12,947.34	8.44	2,945.86	336.71
Seizures/ epilepsy	24/25	4,118.66	3,960.58	3.90	228.08	58.48
Gleibing	174	5,216.15	4,832.67	4.70	413.48	87.89
Acute infection	104/110/478	3,057.67	2,288.03	3.93	6,291.64	639.83
Smoke inhalation	449/450	3,168.60	3,136.22	2.85	32.38	11.36
Fractures (not major trauma)	211/219/224/22	4,531.12	4,630.58	3.05	(89.46)	(29.33)
Sepsis	416	9,081.57	9,215.62	7.60	(873.95)	(116.79)
Average		8,878.72	7,583.53	5.34	1,265.20	166.97*

GI = gastrointestinal; LOS = length of stay.
*Used in the final calculation.

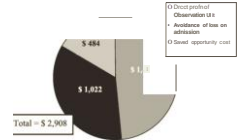


Figure 3. Contribution to observation patient value.

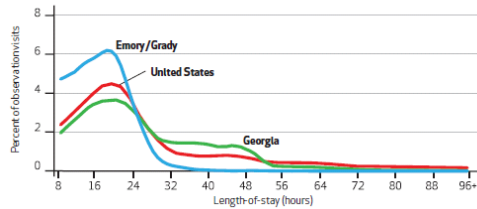
Michael A. Rois, Jason M. Hockenberry, Ryan Miller, Marguerite Barrett, Matthew Whitley, and Stephen R. Pitts

Protocol-Driven Emergency Department Observation Units Offer Savings, Shorter Stays, And Reduced Admissions

	Emory/Grady (Type 1 units)	Georgia (HCUP 2010)	National (NHAMCS 2009-10)
ED volumes	185,901	4,194,602	133 million
OS Volumes	7,199	162,375	1,216,000 **
OS LOS >8hr (average)	17.2 hr	27.2 hr	22.3 hr
% OS >24hr	10.4%	42.8%	29.0%
% OS >36hr	0.1%	23.0%	14.9%
% OS >48hr	0.1%	6.7%	6.9%
% OS >72hr	0%	1.5%	0.9%
OS=>IP admit rate	13.1%	17.8%	23.2%

EXHIBIT 3

Observation Visit Lengths-Of-Stay Across Three Study Groups



Michael A. Rois, Jason M. Hockenberry, Ryan Miller, Marguerite Barrett, Matthew Whitley, and Stephen R. Pitts

Protocol-Driven Emergency Department Observation Units Offer Savings, Shorter Stays, And Reduced Admissions

- U.S. Savings Potential from Type 1 Units:
 - **Observation patients - \$950 Million / year**
 - 38% shorter stays
 - 44% lower admit rates
 - **Short Inpatients - \$8.5 Billion / year**
 - 11.7% of all admissions
 - Savings potential – ED visits vs ED admissions:
 - Avoided ED visits = \$2.3-3.4 Billion/yr
 - Avoided ED admits = \$5.5-8.5 Billion/yr
 - Relative savings = (avoided: admits vs ED visits) 2.4-2.5 times greater

Avoidable ED visits vs Avoidable ED admissions Which saves more?

	Avoidable ED visits	Avoided ED admissions	
		Inpatient admissions under 48 hours	Inpatient admissions under 48 hours with OU eligible conditions
Total ED visits, ^a n	128,970,364	128,970,364	128,970,364
Eligible ED visits, n	7,092,270	7,240,408	4,544,836
Eligible ED visits eligible, % ^b	7.0	5.7	4.5
Ave subgroup cost per case ^c , US \$	687 ^d	4,679 ^e	4,451 ^f
Total cost, ^g millions US \$	6,202	34,246	20,229
Reduction range (low-high), %	37-55 ^h	27-42 ^{20,21,h}	27-42 ^{20,21,h}
Low estimated reduction, millions US \$	2,295	9,272	5,462
High estimated reduction, millions US \$	3,411	14,425	8,496
Low ratio ^b	N.A.	4.0	2.4
High ratio ^b	N.A.	4.2	2.5

THE PRACTICE OF EMERGENCY MEDICINE/ORIGINAL RESEARCH

Use or Abuse? A Qualitative Study of Emergency Physicians' Views on Use of Observation Stays at Three Hospitals in the United States and England

Graham P. Martin, PhD^a; Brad Wright, PhD; Azeemuddin Ahmed, MD, MBA; Jay Banerjee, MBBS, MEd; Suzanne Mason, MBBS, MD; Damian Roland, MBBS, PhD

- Qualitative interviews –
 - 3 hospitals (1 U.S., 2 England)
 - 24 Emergency Physicians
 - Physician views of antecedents of observation care:
 - Economic, operational issues
 - Observation as a “safe space” for patients with unresolved medical, social, and legal issues.
- Physicians used observation status for the specific presentations for which it is well evidenced but acknowledged administrative and financial considerations in their decision making.
- They also highlighted an important role for observation not described in the literature: as a “safe space,” relatively immune from the administrative gaze, **where diagnostic uncertainties, sociomedical problems, and medicolegal challenges could be contained.**

Ann Emerg Med, March 2017

5. Observation Medicine has come of age . . .

NEUROLOGY/CLINICAL POLICY

Clinical Policy: Critical Issues in the Evaluation of Adult Patients With Suspected Transient Ischemic Attack in the Emergency Department



From the American College of Emergency Physicians Clinical Policies Subcommittee (Writing Committee) on Suspected Transient Ischemic Attack; [Ann Emerg Med. 2016;68:354-370.]

CRITICAL QUESTIONS

1. In adult patients with suspected TIA, are there clinical decision rules that can identify patients at very low short-term risk for stroke who can be safely discharged from the ED?

Patient Management Recommendations

Level A recommendations. None specified.
Level B recommendations. In adult patients with suspected TIA, do not rely on current existing risk stratification instruments (eg, age, blood pressure, clinical features, duration of TIA and presence of diabetes [ABCED] score) to identify TIA patients who can be safely discharged from the ED.
Level C recommendation. None specified.

Level A recommendation. Generally accepted principle for action can be either a high degree of clinical certainty (eg, based on evidence from 1 or more Class of Evidence) or multiple Class of Evidence II studies.

Level B recommendation. Recommendations for practice that are based on evidence from a single or a small number of studies that reflect moderate clinical certainty. Based on evidence from 1 or more Class of Evidence II studies or strong consensus of Class of Evidence III studies.

Level C recommendation. Recommendations for practice that are based on evidence from Class of Evidence III studies or, in the absence of any adequate published literature, based on expert consensus. In practice, these practice recommendations are made "consensus" in places in parentheses in the actual clinical recommendation.

2. In adult patients with suspected TIA, what imaging can be safely delayed from the initial ED workup?

Patient Management Recommendations

Level A recommendations. None specified.
Level B recommendations. (1) The safety of delaying neuroimaging from the initial ED workup is unknown. If noncontrast brain MRI is not readily available, it is reasonable for physicians to obtain a noncontrast head CT as part of the initial TIA workup to identify TIA mimics (eg, intracranial hemorrhage, mass lesion). However, noncontrast head CT should not be used to identify patients at high short-term risk for stroke. (2) When feasible, physicians should obtain MRI with diffusion-weighted imaging (DWI) to identify patients at high short-term risk for stroke. (3) When feasible, physicians should obtain cervical vascular imaging (eg, carotid ultrasonography, CTA, or MRA) to identify patients at high short-term risk for stroke.

3. In adult patients with suspected TIA, is carotid ultrasonography as accurate as neck CTA or MRA in identifying severe carotid stenosis?

Patient Management Recommendations

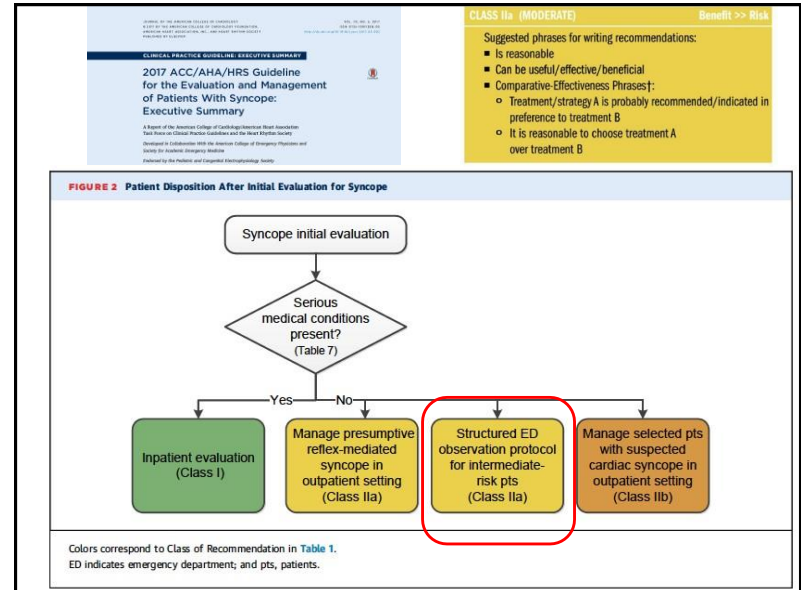
Level A recommendations. None specified.
Level B recommendations. None specified.
Level C recommendations. In adult patients with suspected TIA, carotid ultrasonography may be used to exclude severe carotid stenosis because it has accuracy similar to that of MRA or CTA.


4. In adult patients with suspected TIA, can a rapid ED-based diagnostic protocol safely identify patients at short-term risk for stroke?

Patient Management Recommendations

Level A recommendations. None specified.
Level B recommendations. In adult patients with suspected TIA without high-risk conditions,* a rapid ED-based diagnostic protocol may be used to evaluate patients at short-term risk for stroke.

Level C recommendations. None specified.




Academic Emergency Medicine
Official Journal of the Society for Academic Emergency Medicine

EDUCATIONAL ADVANCE

A Model Longitudinal Observation Medicine Curriculum for an Emergency Medicine Residency

Writing committee: Matthew Wheatley, MD, Christopher Baugh, MD, MBA, Anwar Osborne, MD, MPM, Carol Clark, MD, Phillip Shayne, MD, and Michael Ross, MD
ACADEMIC EMERGENCY MEDICINE • April 2016, Vol. 23, No. 4 • www.aemj.org

- PGY I – Principles and observation patient selection
- PGY II – Managing patients in the observation unit
- PGY III – Managing the observation unit

- Fellowship – Learning the research, clinical science, administration, and policy of observation medicine

What is Observation Medicine?

... is it a procedural or cognitive skill?

- | | |
|---|---|
| <ul style="list-style-type: none"> • <u>Procedural skill analogy:</u>
Ultrasound • Like an ultrasound machine, users of an observation unit need to know its: <ul style="list-style-type: none"> ØHow to operate it ØWhen it breaks how to fix it ØCost of purchasing and best models ØIndications for use ØLimitations ØProven benefits | <ul style="list-style-type: none"> • <u>Cognitive skill analogy:</u>
Toxicology • Like toxicology, observation medicine is: <ul style="list-style-type: none"> ØA cognitive (non-procedural) skill ØAll ED physicians must know ØThere are benefits to having local content experts (Obs Unit Directors) to run the program |
|---|---|

C. The Future . . .

1. Future leaders
2. A vision for Emergency Medicine
3. Home to home
4. Policy directions
5. Teaching Observation Medicine
6. Future roles - Short Stay Services
7. The big request. . .

1. Future leaders* ...



*? - YOU

2. A vision for Emergency Medicine: the "Central Hub" model

Decentralized Model:

The emergency department is a necessity that must be "dealt with" that competes with elective cases for beds

Emergency physicians run codes and triage patients

Major services own and run their respective "pieces" of the ED

Care is fragmented and more costly

Central Hub Model:

Emergency department is the "front door" of the hospital

Triage is the central focal point

- Urgent care centers
- Prehospital care
- Resuscitation
- Specialty zones (trauma, peds)
- Observation unit
- Care coordination

Patient centered, less costly

3. Shift from "readmissions" to "home to home"

PERSPECTIVE

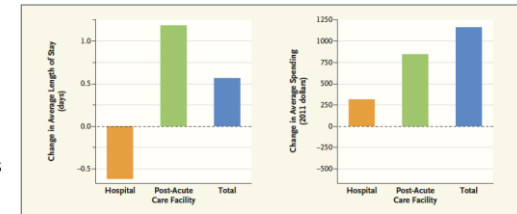
MEASURING WHAT MATTERS TO PATIENTS AND PAYERS

Home-to-Home Time — Measuring What Matters to Patients and Payers

N ENGL J MED 377:1 NEJM.ORG JULY 6, 2017

Michael L. Barnett, M.D., David C. Grabowski, Ph.D., and Ateev Mehrotra, M.D., M.P.H.

- Post acute care (SNF) following admission has increased from 5% to 20% of Medicare discharges.
- Time away from home is what matters most to patients
- For selected patients, type 1 observation units can improve this metric



Changes in Average Length of Stay and Spending among Medicare Beneficiaries, by Setting, 2004-2011.

Changes in length of stay (in days) and spending (in 2011 dollars) were estimated using a 20% sample of Medicare administrative claims from 2004 to 2011. We calculated the annual average length of stay and inflation-adjusted Medicare payments for all hospitalized beneficiaries by setting in three categories: hospital, post-acute care facility (including skilled nursing facilities, inpatient rehabilitation facilities, and long-term care hospitals), and total. Because a small number of extremely long stays at skilled nursing facilities might bias our estimates, we excluded beneficiaries with post-acute care facility stays exceeding 100 days.

4. Policy directions. . .

- Current Medicare policy issues:
 - Count time in observation toward the 3 day SNF rule
 - Include Self Administered Meds in the Comprehensive APC
- Clarify and address physician payment issues and incentives
- Address the CPT conundrum:
 - Which Evaluation and Management Service does not have its own “site of service” code?
 1. Emergency
 2. Clinic
 3. Critical Care
 4. Inpatient
 5. Observation

5. Teaching Emergency Medicine: Avoidable ED visit vs Avoidable ED admissions

- Avoidable ED visits
 - Under constant scrutiny by policy makers
 - Currently being provided by APPs in most EDs
 - Being shifted to Urgent Care Clinics
- Avoidable ED admissions
 - Maintains the “Central Hub” model of EM
 - An area where EM has clearly established expertise
 - Strong evidence of improved outcomes relative to traditional practices
 - Ability to rapidly adapt to innovations in health care and clinical science

6. Future Roles: New clinical areas for Observation Medicine

- Continued chest pain transitions to outpatient settings
- New Protocols:
 - Venous Thromboembolism (low risk PE)
 - Subacute small strokes
 - Post procedural patients – cardiac catheterizations, appendectomies
 - Hemodialysis patients
 - Mild – Moderate DKA
 - Psychiatric emergencies
- Innovative approaches:
 - Alternative health care settings:
 - Satellite and freestanding EDs
 - Rural settings
 - Integration with paramedicine and telemedicine
 - Home ADPs and ATPs?

6. Future Roles: Evolution of the Observation Unit Medical Director

- Observation Unit Director skill set:
 - Clinical skills
 - Emergency Medicine, Internal Medicine, Family Medicine, Pediatrics
 - Unique Knowledge – Observation Medicine
 - Administrative skill – designing and running a unit, leadership, team building
 - Health Policy expertise - required
 - Emergency, Observation, Inpatient policy issues
 - Medicare policies and updates
 - Full understanding of issues around “Obs, LOPS, and SIPS”
 - CPT coding and billing
 - Analytic skills – I.T., data analytics; reporting for utilization, quality, and finance
 - Academic Medical Centers –
 - Service – above
 - Integration into training programs
 - Clinical and health services research



WHY STOP THERE???

EDOU Medical Director – growth to the next level

- ED OU director will likely have the most expertise in the management of observation patients, and short stay services.
 - Observation Patients (Obs)
 - Long OutPatient stays (LOPS, or elective outpatient procedures)
 - Short InPatient Stays (SIPS)

- Expand the foot print:
 - Address “**disparities in care**” of observation patients by settings
 - Observation patients –
 - ANYWHERE in a **hospital**
 - ANYWHERE in a **system**
 - Analyze by setting, service, disposition
 - Opportunity to
 - Improve quality of care
 - Decrease cost
 - Open inpatient bed (revenue enhancement)

Emory Healthcare: Short Stay Services Project

April 2015 – March 2016

- **Population:** Discharged observation status patients
- **Timeframe:** 12 consecutive months
- **Hospitals:** EUH, EUHM, ESJH, EJCH
- **Settings:** ED Obs Unit (CDU), HMS Obs Unit (HMS OU), Floor (Non-OU)
- **Outcome:** Census, LOS, Total Direct Cost, Savings (relative to floor).

Setting	# Units (# Beds)	Count of Cases	Percent total	Ave LOS (hrs)	Bed Days Saved (per year)	Ave Total Direct Costs	Cost savings (per year)
CDU	3 (29)	6,017	46%	17	4,065	\$1,342	\$3,824,115
HMSOU	2 (20)	2,040	16%	28	398	\$1,874	\$211,254
Non-OU	N.A.	4,916	38%	33	0	\$1,978	0
Grand Total	5 (49)	12,973	100%	25	4,464	\$1,667	\$4,035,369

7. The big request . . .

Total Number of All U.S. Registered Hospitals (2017 AHA stats)	5,564
Number of U.S. Community Hospitals	4,862
Number of Nongovernment Not-for-Profit Community Hospitals	2,845
Number of Investor-Owned (For-Profit) Community Hospitals	1,034
Number of State and Local Government Community Hospitals	983
Number of Federal Government Hospitals	212
Number of Nonfederal Psychiatric Hospitals	401
Number of Nonfederal Long Term Care Hospitals	79
Number of Hospital Units of Institutions (Prison, College Infirmarys, Etc.)	10

Estimates:

Hospitals WITH an Observation Unit	= 1,391 (25%)
Hospitals WITHOUT an Observation Unit	= 4,173 (75%)

That leaves a **LOT** of room for growth!

- 10% = 417
- 20% = 834

8. THE BIG ASK...

¾ of U.S. Hospitals
don't have an
observation unit...

We NEED YOU.



Summary

Observation Medicine is based on a growing body of literature that conforms to contemporary scientific evidence and medical practice.

There is a need for well trained observation medicine leaders to help the U.S. Health Care System meet current and future needs for observation services.

There has never been a better time to become involved in Observation Medicine!