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# Chest Pain Wave I

Making the Most Out of an Observation Stay

**TCPi**

Transforming Clinical  
Practices Initiative

 American College of  
Emergency Physicians®

ADVANCING EMERGENCY CARE 

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# Presenters



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**TCPi**

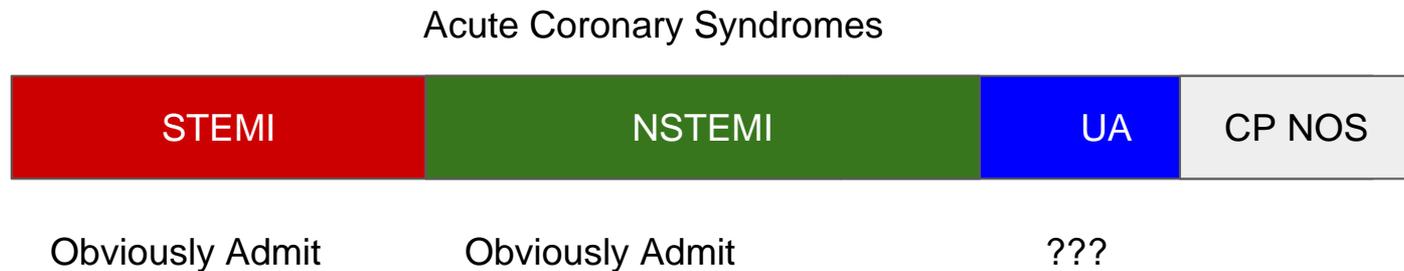
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# Which patients need to stay in the hospital for chest pain evaluation?



We talked about how higher sensitivity troponin has changed diagnosis of NSTEMI

We talked about who can probably be safely discharged (HEART Score).

An Observation Unit can help with this dilemma

# Who can go home?

#alreadycovered

**Table 3.** Diagnostic and predictive indices of the HEART score for predicting major adverse cardiac events or acute myocardial infarction (95% confidence intervals in parentheses).

Study	Outcome	N	Sensitivity	Specificity	NPV	PPV	Proportion low risk <sup>a</sup>	Outcome prevalence	Missed outcome <sup>a</sup>
<b>Backus 2010</b>	MACE within 6 weeks	880	98.1% (94.6–99.6)	41.6% (37.9–45.2)	99.0% (97.1–99.8)	26.9% (23.3–30.7)	32.5%	18.0%	1.0%
<b>Fesmire 2012</b>	MACE within 30 days	2148	92.4% (88.9–95.1)	48.5% (47.2–51.8)	97.4% (96.2–98.3)	23.9% (21.5–26.4)	43.3%	14.7%	2.6%
<b>Backus 2013</b>	MACE within 6 weeks	2388	96.3% (94.0–97.9)	43.2% (41.0–45.4)	98.3% (97.2–99.0)	25.8% (23.6–28.1)	36.4%	17.0%	1.7%
<b>Six 2013</b>	MACE within 30 days	2906	96.3% (93.8–97.9)	31.8% (30.0–33.7)	98.3% (97.2–99.0)	17.3% (15.7–19.0)	28.2%	12.9%	1.7%
<b>Melki 2013</b>	MACE within 3 months	410	96.7% (82.8–99.9)	64.7% (59.7–69.6)	99.6% (97.8–100)	17.8% (12.3–24.5)	60.2%	7.3%	0.4%
<b>Marcoon 2013</b>	MACE within 30 days	8252	75.5% (72.0–78.7)	67.5% (66.5–68.6)	96.9% (96.4–97.4)	16.8% (15.5–18.2)	64.1%	8.0%	3.1%
<b>Visser 2014</b>	MACE within 6 weeks	255	93.3% (84.1–97.8)	44.4% (37.1–52.0)	94.1% (86.8–98.1)	41.2% (33.7–49.0)	33.3%	29.4%	5.9%
<b>Leite 2015</b>	MACE within 6 weeks	174	90.9% (70.8–98.9)	63.2% (55.0–70.8)	98.0% (92.8–99.8)	26.3% (16.9–37.7)	56.3%	12.6%	2.0%
<b>Bodapati 2016</b>	MACE within 30 days	678	98.6% (95.0–99.8)	43.5% (39.2–47.8)	99.2% (97.0–99.9)	31.6% (27.3–36.2)	34.7%	20.9%	0.9%
<b>Sun 2016</b>	MACE within 30 days	8255	85.8% (82.5–88.7)	51.2% (50.1–52.3)	98.2% (97.8–98.6)	10.3% (9.4–11.3)	48.9%	6.2%	1.8%
<b>Santi 2016</b>	MACE within 30 days	1378	100% (98.2–100)	43.7% (40.8–46.6)	100% (99.3–100)	23.8% (21.0–26.8)	37.2%	15.0%	0.0%
<b>Carlton 2015 (hs-cTnT)</b>	(non)-fatal AMI within 30 days	959	93.7% (85.5–99.9)	33.9% (33.1–34.2)	98.3% (96.2–99.4)	11.3% (10.3–11.8)	31.6%	8.2%	1.7%
<b>Carlton 2015 (hs-cTnI)</b>	(non)-fatal AMI within 30 days	867	97.0% (88.7–99.5)	34.7% (34.0–34.9)	99.3% (97.3–99.9)	10.9% (10.0–11.2)	35.2%	7.6%	0.7%

N: number of patients; NPV: negative predictive value; PPV: positive predictive value; MACEs: major adverse cardiac events; AMI: acute myocardial infarction; hs-cTnT: high-sensitivity cardiac troponin T; hs-cTnI: high-sensitivity cardiac troponin I.

<sup>a</sup>In patients with HEART score of 0–3.

Review

## The HEART score for early rule out of acute coronary syndromes in the emergency department: a systematic review and meta-analysis

Patricia Van Den Berg<sup>1</sup> and Richard Body<sup>2,3</sup>

Some people may not be comfortable with 1.7% MACE rate at 30 days

European Heart Journal: Acute Cardiovascular Care  
1–9

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DOI: 10.1177/2048872617710788

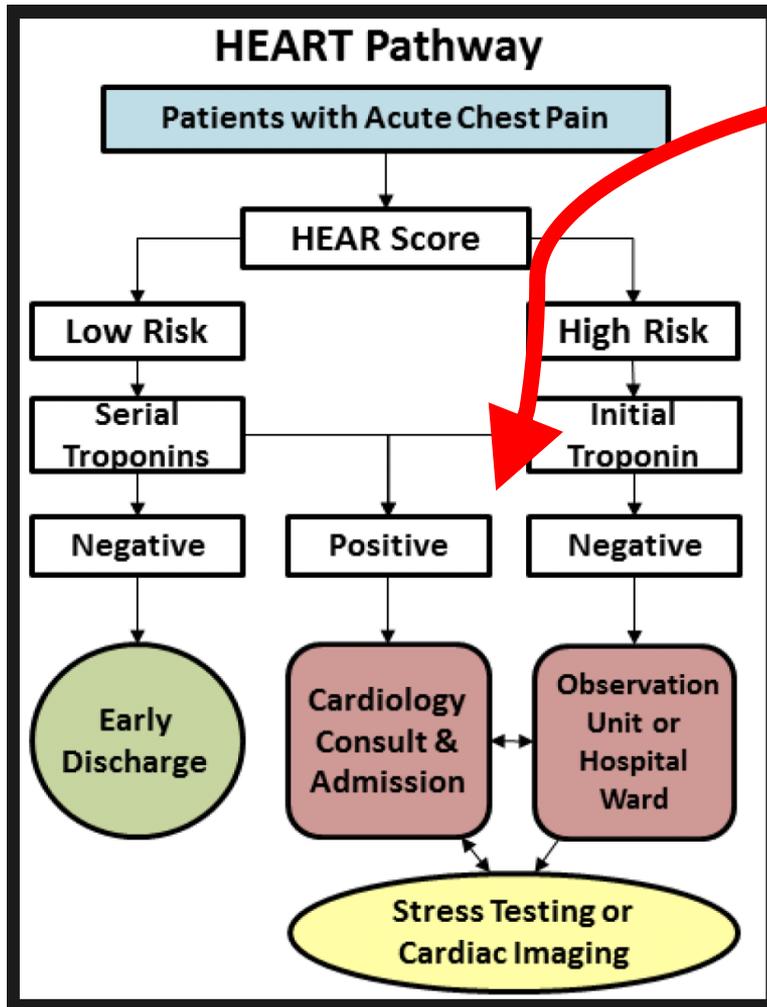
journals.sagepub.com/home/acc

SAGE

Van Den Berg P, [Body R](#). The HEART score for early rule out of acute coronary syndromes in the emergency department: a systematic review and meta-analysis. Eur Heart J Acute Cardiovasc Care. 2017 May 1:2048872617710788. doi: 10.1177/2048872617710788.

Who can go home?

#alreadycovered



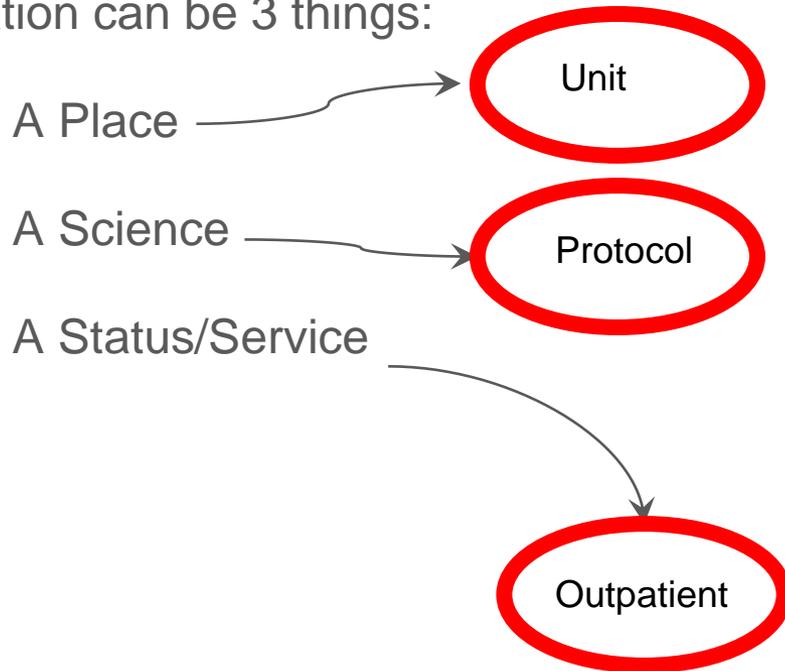
If this second troponin is positive OR if the HEART score is high risk, THIS IS WHERE OBSERVATION CAN HELP

You can fix this issue by using the HEART Pathway (Mahler previously discussed) and add on second troponin.

Mahler et. al, Crit Path Cardiol, 2011  
Mahler et. al, Int J Cardiol, 2013  
Mahler et al, Circ CVQO J, 2015.  
Mahler et al, JMIR, 2016

# What is Observation?

Observation can be 3 things:



Can Occur in Different Settings

- **Type 1** - Protocol-driven in a dedicated obs unit
- Type 2 - Discretionary care in a dedicated obs unit
- Type 3 - Protocol-driven in any bed in the hospital
- Type 4 - Discretionary care in any bed in the hospital

#1

## Observation

Observation services are provided on hospital premises, including using other staff, which are used to evaluate an outpatient's condition as an inpatient...

Medicare: Hospital M



in a hospital's  
monitoring by nursing or  
to evaluate an  
possible admission

Observation Services are....

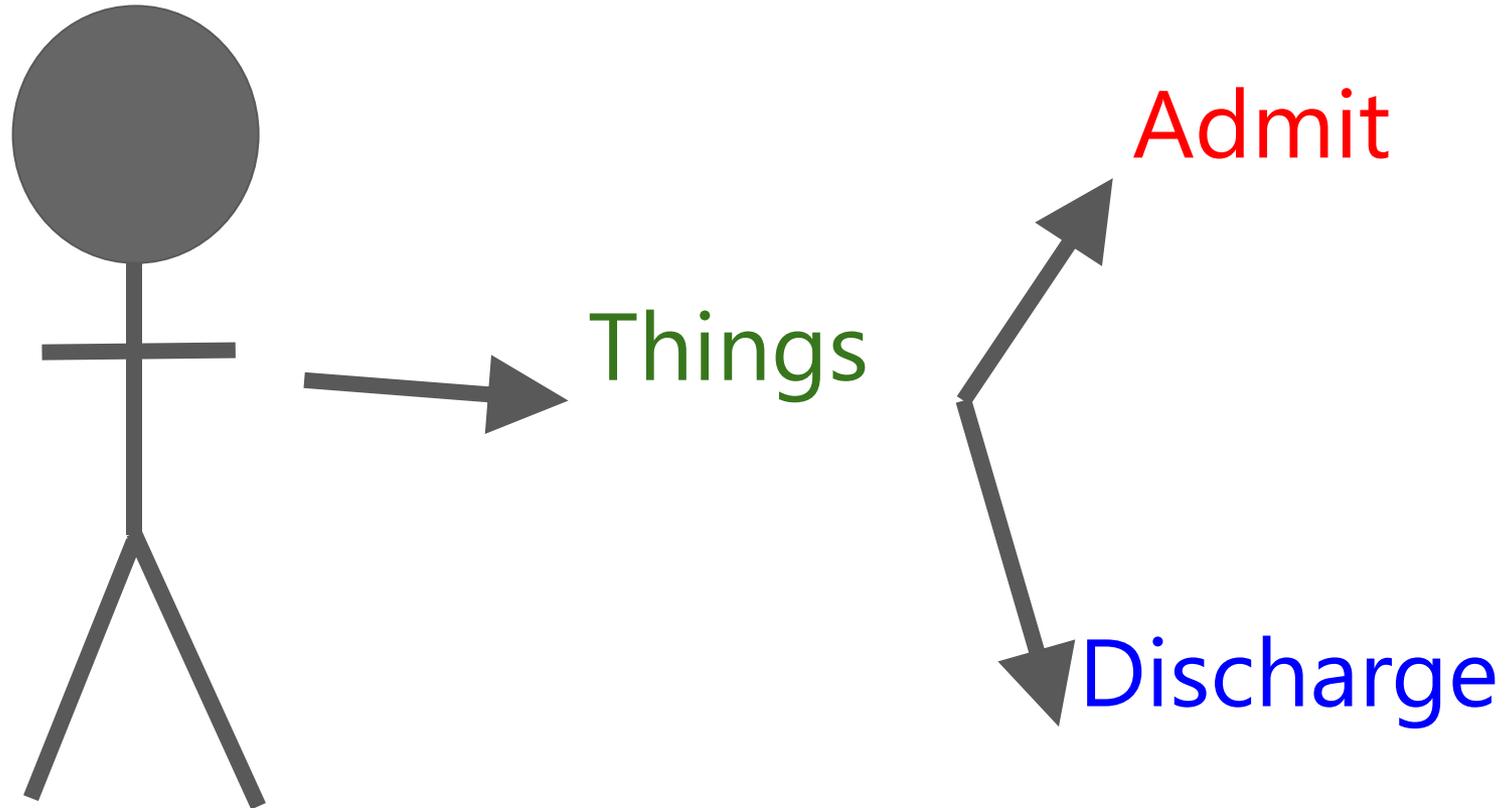
Things

Admit

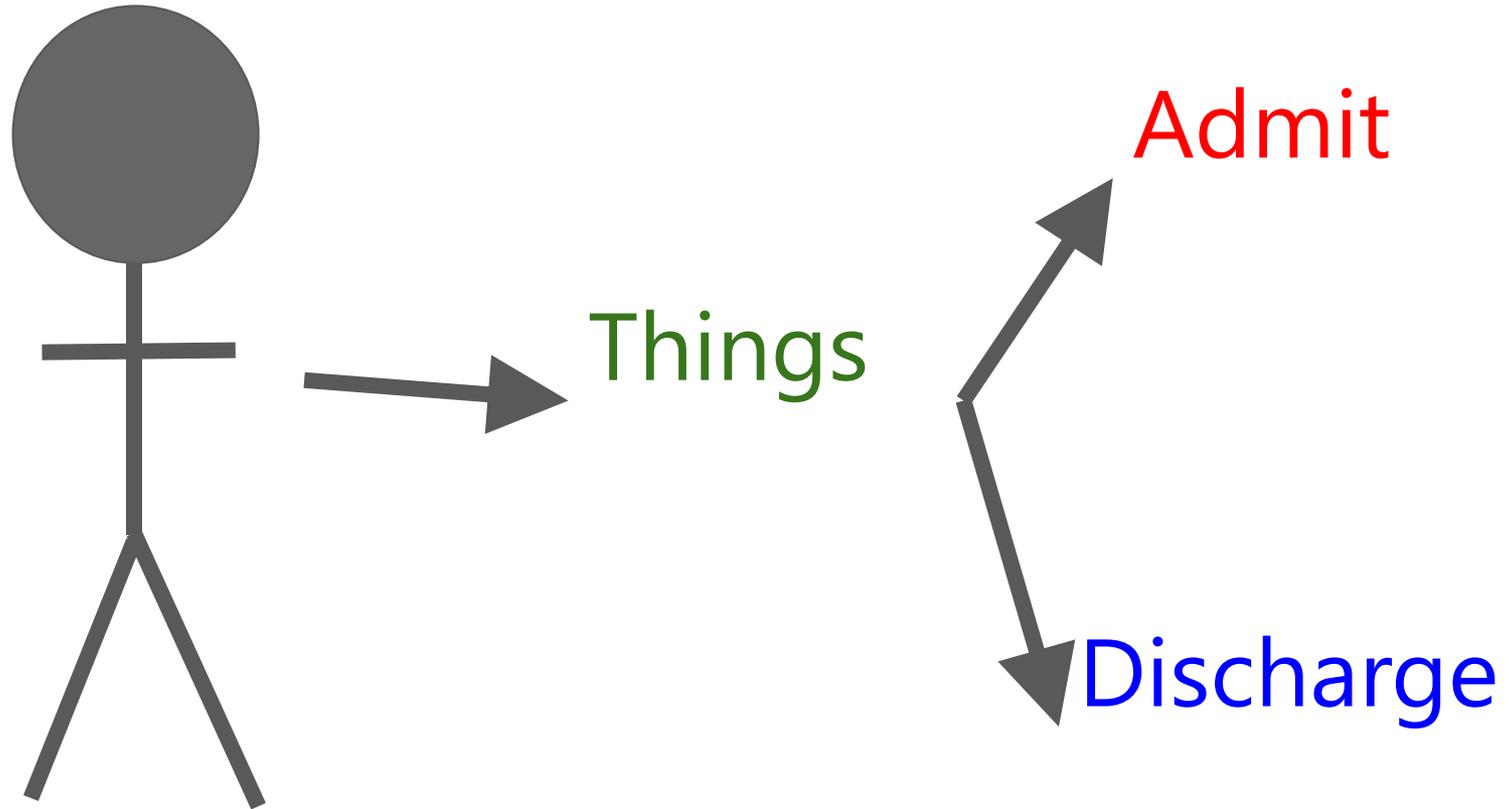
Discharge



# Observation Protocol



# 3 Key Components

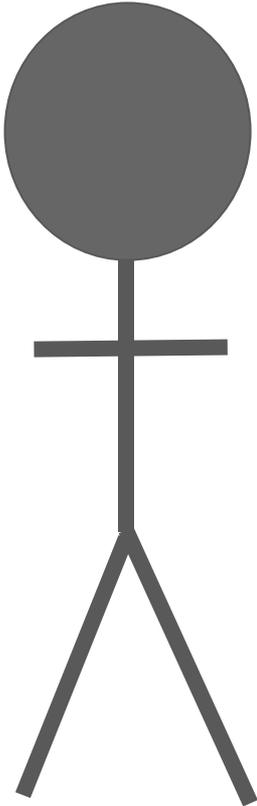


Patient Selection

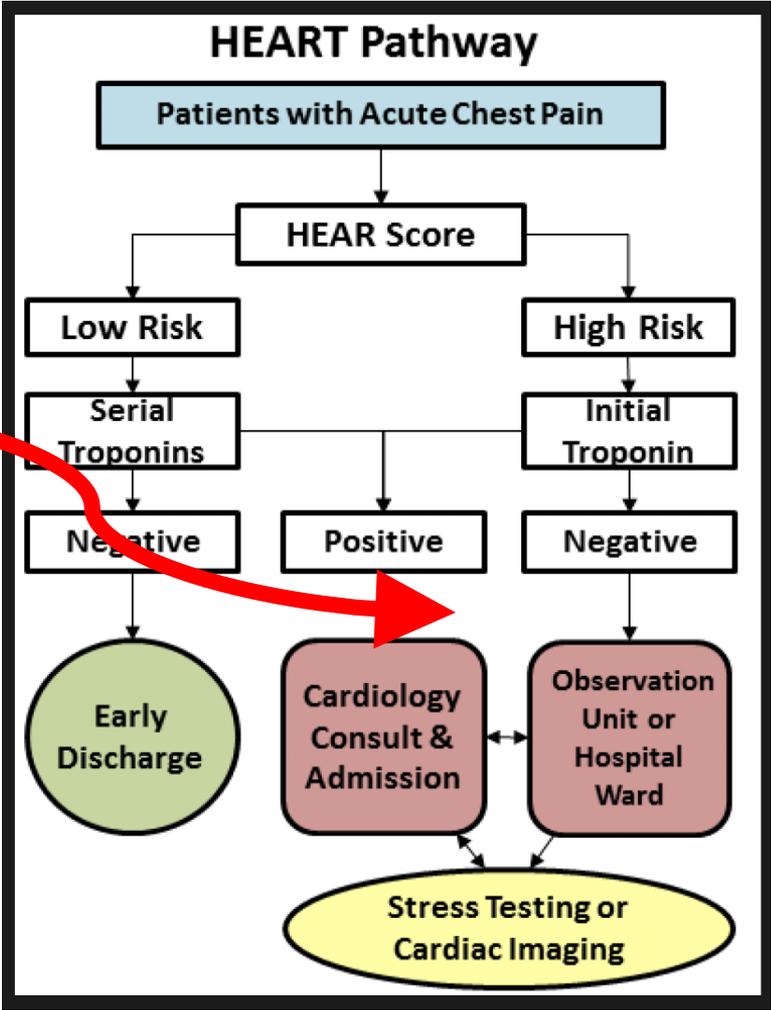
Interventions

Decision Criteria

# Observation Protocol for Chest Pain



Patient Selection



# Observation Protocol

To Be Covered in the  
Imaging Webinar

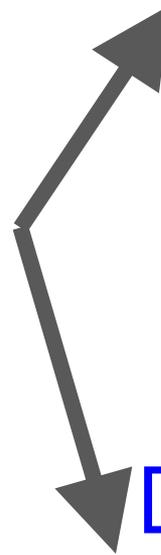
Things

Admit

Discharge

Interventions

Decision Criteria



# Observation Protocol

Where can I find out about more protocols?

[www.obsprotocols.org](http://www.obsprotocols.org)

Menu

- [Home](#)
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- [Wiki](#)
- [Articles](#)

## Chest Pain

*Chest Pain is the most well studied of any EDOU obs protocol.*

### Table of contents

Chest Pain

- [Inclusion Criteria](#)
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- [Potential Interventions](#)
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- [Admit](#)

### Inclusion Criteria

- ACS risk is low based on [Reilly-Goldman](#) criteria
- Chest discomfort is potentially due to cardiac ischemia
- No acute ECG changes of ACS, negative initial troponin (<0.04 or <0.15 if very low suspicion of ACS)
- Acceptable vital signs

### Exclusion Criteria

- Moderate to high risk criteria by Reilly / Goldman criteria (Pain worse than usual angina or like prior MI, recent \*revascularization, SBP<110, rales above both bases).
- New ECG changes consistent with ischemia
- Positive troponin (>0.15) not known to be chronic
- Stress test or cardiac imaging needed - but NOT available while in the CDU
- Chest pain is clearly not cardiac ischemia
- Recent normal cardiac catheterization (no coronary stenosis)
- Private attending chooses hospital admission

### Potential Interventions

- Continue saline lock, O2, cardiac and ST segment monitor, nitrates prn, daily aspirin, and NO CAFFIENE if persantine is planned, NPO six hours before stress test.
- Serial Troponin I and ECGs at 2 and 6 hour from first ED blood draw
- No 6-hour level needed if negative provocative test done after 2hr draw
- 6 hour lab needed if positive "delta" (normal, but >50% rise) between 1st two labs
- Repeat EKG based on symptoms or ST monitor alert – show to CDU physician STAT
- Stress testing and cardiac imaging - if initial and 2 hour and "delta" markers are negative

### Discharge Criteria

#### Home

- Acceptable VS, stable symptoms, no serious cause of symptoms identified
- Normal serial cardiac markers and EKGs
- Negative provocative test or cardiac imaging for ACS – no ischemic or reversible defects identified.

#### Admit

- Unstable VS

# Inclusion and Exclusion Criteria

# Interventions

# Discharge Criteria



# OBSERVATION MEDICINE -Science and Solutions Conference

SEPTEMBER 14-15, 2017  
NASHVILLE, TENNESSEE



## ***The Definitive Observation Medicine Conference***

- Hear from and network with top Observation Medicine leaders & authors
- Learn about why your hospital needs an Observation Unit & which Observation Unit design is best for you
- **New this year!** Day 2 will include two tracks: **Beginners:** Starting an Observation Unit & **Advanced:** Optimizing & Growing your Observation Unit

***Please visit [www.mcep.org](http://www.mcep.org) for further information.***



MICHIGAN COLLEGE OF  
EMERGENCY PHYSICIANS

# Observation Units can be managed by ED physicians

## Multiple Provider Models Exist

### One Physician

ED Physician rounds at beginning of shift with APP who is stationed in unit completing care

Requires APP  
Physician time 8-10 min/pt

**Pros**

**Cons**

### Two Physician

Distinct group of physicians rounds on patients

May or may not use APP  
Physician time 40-50 min/pt without APP

May bill under separate Medicare ID

# Observation Units can be managed by the ED

## Workflow notes

Nursing Ratio is typically 4:1 and usually there's 1 PCA at 8 pts

Often the unit has a patient nadir in the midday and these beds can be flexed for a multitude of other functions (like holds or short stay procedures)

Rounds should occur early and there should be some follow up rounds before 5pm

# Yes! It works and is in scope



Original Contribution

Effect on efficiency and cost-effectiveness when an observation unit is managed as a closed unit vs an open unit<sup>1,2</sup>

Margarita E. Pena MD<sup>3,\*</sup>, James M. Fox MD<sup>3</sup>, Anthony C. Southall MD<sup>3</sup>, Robert B. Dunne MD<sup>3</sup>, Susan Szpunar PhD<sup>3</sup>, Stephen Kler<sup>4</sup>, Robert B. Takla MD<sup>3</sup>

<sup>1</sup> St. John Hospital and Medical Center, Dept. of Emergency Medicine, Detroit MI and Wayne State University School of Medicine, Detroit MI

<sup>2</sup> St. John Hospital and Medical Center, Dept. of Medical Education, Detroit MI

<sup>3</sup> St. John Hospital and Medical Center, Dept. of Emergency Medicine, Detroit MI

American Journal of Emergency Medicine 31 (2013) 1042–1046

**Table 1**

Patient level encounter data and boarder hours data for all 3 periods

Characteristic	Period 1	Period 2	Period 3	P or 95% CI of difference in means
Mean ED volume/month	8088.6±348.1	8729±681.7	9561.4±522.7	1 vs 2: −1251.4 to −29.6 1 vs 3: −2083.7, −861.9 2 vs 3: −1443.2, −221.4
Mean OU volume/month	576.2±32.9	620.1±66.7	758.0±34.2	1 vs 2: −97.9,10.1 1 vs 3: −235.8 to −127.9 2 vs 3: −191.9 to −84.0
Mean % of ED volume	7.1%	7.1%	7.9%	1 vs 3, 2 vs 3, P < .0001
Mean LOS (hours) discharged patients	27.3±1.7 *27.239 (26.172–27.961)	17.3±1.3 17.065 (16.492–17.644)	16.9±0.4 17.000 (16.475–17.325)	1 vs 2: −11.4 to −8.6 1 vs 3: −11.8 to −9.0 2 vs 3: −1.8,1.04
Mean LOS (hours) admitted patients	20.7±2.2 19.928 (19.470–21.413)	16.5±3.0 15.804 (14.261–19.576)	15.0±0.44 14.950 (14.775–15.150)	1 vs 2: −6.6 to −1.7 1 vs 3: −8.1 to −3.1 2 vs 3: −3.9,1.01
Admission rate from the OU	32.5%	21.6%	19.6%	All comparisons, P < .001
30-day all cause admission rate post-OU discharge	11.6%	7.7%	7.9%	1 vs 2, 1 vs 3, P < .0001
Boarder hours	246.5±54.6 235.0 (IQR 212–268)	199.3±41.0 205.5 (189.50–223.25)	99.2±25.0 102.5 (74.50–123.75)	1 vs 2: -95.11,0.71 1 vs 3: −195.2 to −99.4 2 vs 3: −148.0 to −52.2

\* Median with calculated interquartile range in parenthesis.

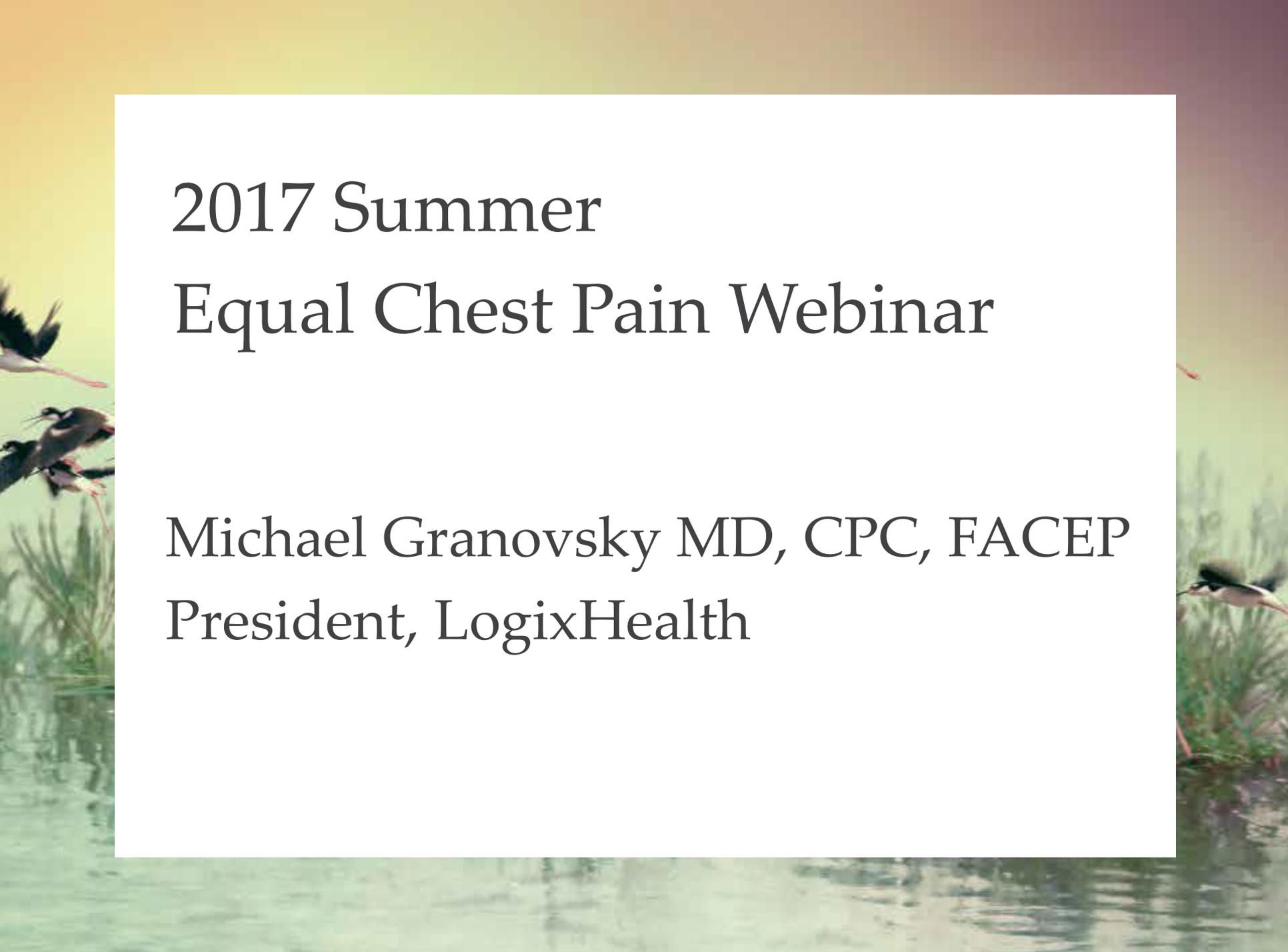
State of the Art: Emergency  
Department Observation Units

Michael A. Ross, MD,\* Taruna Aurora, MD,† Louis Graff, MD,‡ Pawan Suri, MD,†  
Rachel O'Malley, MD,§ Aderonke Ojo, MD,¶ Steve Bohan, MDI, and Carol Clark, MD\*\*

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

(*Crit Pathways in Cardiol* 2012;11: 128–138)

\*Added since published after this review



2017 Summer

# Equal Chest Pain Webinar

Michael Granovsky MD, CPC, FACEP  
President, LogixHealth



# **Requirements to Report Observation Services**

# General Documentation Requirements

- Timed/dated order to place in observation status
- A treatment plan regarding the goals of observation
- Clinically appropriate progress notes
  - Asthma different than chest pain
- A discharge summary reviewing the course in observation, findings, and plan



# **Coding Construct and Documentation Requirements**

# Professional Observation CPT Codes

- Same day admit and discharge CPT Codes:
- **99234** – Low severity
  - Low-complexity MDM
- **99235** – Moderate severity
  - Moderate-complexity MDM
- **99236** – High severity
  - High-complexity MDM



# CMS 8 Hour Rule



- Medicare requires 8 hours of Obs. on the same calendar date to report 99234-99236



RAC Issue A00010002013\*:

<u>Issue Number</u>	<u>Issue Name</u>	<u>Type of Review</u>	<u>Provider Type</u>	<u>State(s) Impacted</u>	<u>Date Posted</u>	<u>Details</u>
A000262015	Observation Care for Fewer Than 8 Hours - JL	Automated	Physician/Non-physician Practitioner	DC, DE, MD, NJ, PA	9/3/2015	<a href="#">Details</a>

# Professional Observation CPT Codes

- Admit and discharge more than one calendar day:
- Initial day CPT codes:
  - **99218** – Low severity
    - Low-complexity MDM
  - **99219** – Moderate severity
    - Moderate-complexity MDM
  - **99220** – High severity
    - High-complexity MDM



# Professional Observation CPT Codes



- **Discharge day CPT Code:**
- **99217-** Discharge Day
- Includes final exam, discussion of observation stay, follow-up instructions, and documentation
- Used with codes from the initial observation day codes series (99218/99219/99220)

# Coding Scenarios Observation Services

Observation Level of Care	Care All on the Same Day	Care Covers Two Calendar Days
1	99234	99218 + 99217
2	99235	99219 + 99217
3	99236	99220 + 99217

# Physician Documentation Requirements

- All but the lowest level Obs require very significant Hx and PE documentation
- Comprehensive Hx and PE:  
99219/99220 & 99235/99236
  - HPI: 4 elements
  - PFSHx: 3 areas\* (**Family Hx**)
  - ROS: 10 systems
  - PE: 8 organ systems
- Beware overuse of macros for ROS and PE



# 2017 RVU Values for Observation Services

Same Day Obs	Total RVU	Over Midnight Obs	Total RVU	ED E/M Service	Total RVU
99234	3.77	99217	2.06	99284	3.32
99235	4.78	99218	2.82	99285	4.90
99236	6.16	99219	3.84		
		99220	5.25		

99217 + 99220 = 7.31 RVUs Total

# Observation Unit Staffing



- 10 bed unit...turned 1.3 times daily
  - Blend of moderate and high ....5.7 RVUs per case
  - 74 RVUs....\$36/RVU....\$2,700 daily = \$112/hr
  - Cost: salary, benefits, overhead...?tough to cover costs

## Staffing Solutions

- MD coverage in the morning and evening
  - New admits and discharges
  - 10hrs X \$150 = \$1500
- PA/NP interim coverage
  - 12hrs X \$70 = \$840



# **Observation Status and Patient Financial Impact**

# Patient Financial Considerations

- Obs is an outpatient service covered under Medicare part B
- Concerned beneficiaries may pay more as outpatients than if they were admitted as inpatients
  - 80/20 co-insurance under part B
- If not inpatient then responsible for SNF charges
  - In OIG study, 11% of Obs was > 3 days
- Self administered (P.O.) medications not covered

# Patient Financial Detail



- 20% co pays add up for longer complex Obs stays
  - Inpatient expense: Part A inpatient deductible \$1,288
- SNF
  - Obs stay...no qualifying SNF Medicare coverage
    - Patient may be entirely responsible - \$5,000
    - Typical stay starts at roughly \$250 per day
  - Qualifying inpatient stay spanning 3 nights
    - No patient SNF cost sharing for first 20 days
    - After 20 days co-payment is \$145 per day
- Self administered meds- “uncovered service” - gross hospital charges are in play (average bill \$528)

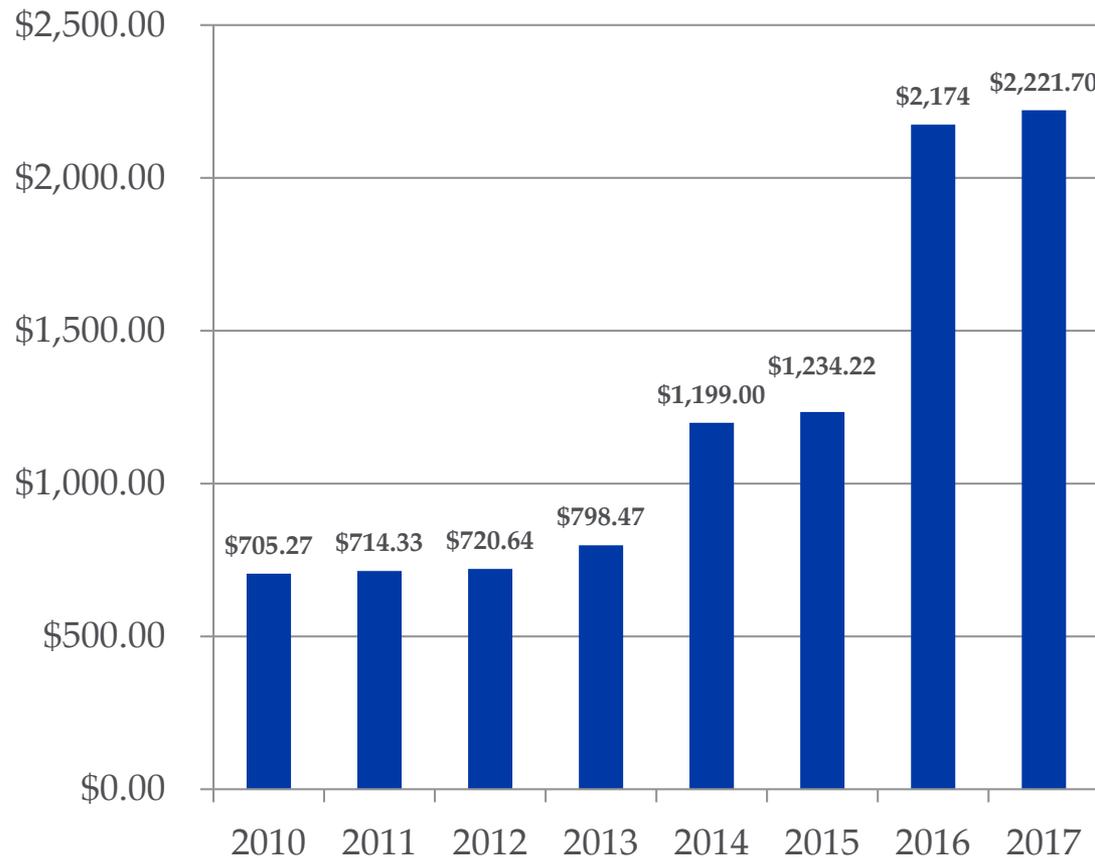
# March 2016 ACEP Now Syncope Cost Comparison Inpatient vs Observation



SERVICE	INPATIENT	OBSERVATION
<b>Facility Fees</b>	Patient pays Part A deductible: \$1,288 Medicare Part A pays Diagnosis Related Group (DRG) 312: \$4,101* (pre deductible \$2,813)	Patient pays 20% of C-APC 8011: \$434.83 Medicare Part B pays 80% of C-APC 8011: \$1,739.31
<b>Professional Fees</b>	Patient pays 20% of fees: \$110.21 Medicare Part B pays 80%: \$440.83 <ul style="list-style-type: none"> <li>• Initial evaluation CPT 99223: \$204.22</li> <li>• Subsequent evaluation CPT 99233: \$104.98</li> <li>• Discharge evaluation CPT 99239: \$108.20</li> <li>• Computed tomography (CT) interpretation HCPCS 70450: \$43.35</li> <li>• Echocardiogram (ECG) interpretation HCPCS 93306: \$64.49</li> <li>• ECG interpretation x3 CPT 93010: \$8.60 x3 (\$25.80)</li> </ul>	Patient pays 20% of fees: \$78.82 Medicare Part B pays 80%: \$315.29 <ul style="list-style-type: none"> <li>CPT 99220: \$187.02</li> <li>–</li> <li>CPT 99217: \$73.45</li> <li>HCPCS 70450: \$43.35</li> <li>HCPCS 93306: \$64.49</li> <li>CPT 93010: \$8.60 x3 (\$25.80)</li> </ul>
<b>Medications</b>	Patient pays \$0 Medicare Part A pays DRG payment	Patient pays entire cost: \$127** Medicare Part B pays \$0
<b>Laboratory</b>	Patient pays \$0 Medicare Part A pays DRG payment	Patient pays \$0 Medicare Part B pays C-APC payment
<b>Facility Diagnostics</b>	Patient pays \$0  Medicare Part A pays DRG payment	Patient pays \$0  Medicare Part B pays C-APC payment
<ul style="list-style-type: none"> <li>• Cardiac monitoring x48 hours</li> <li>• CT of the brain</li> <li>• Trans-thoracic echocardiogram</li> <li>• ECG x3</li> </ul>		
<b>Total Payments:</b>	Patient: \$1,398.21 ← Medicare Part A: \$2,813 Medicare Part B: \$440.83	Patient: \$640.65 ← Medicare Part A: \$0 Medicare Part B: \$2,054.60
<b>Total Revenue:</b>	Hospital: \$4,101 Professional: \$551.04	Hospital: \$2,301.14 Professional: \$394.11
<b>TOTAL COST:</b>	\$4,652.04	\$2,695.25

# Observation Facility Payment

# 2017 Observation Facility Payment



Year	CMS Payment
2010	\$705.27
2011	\$714.33
2012	\$720.64
2013	\$798.47
2014	\$1,199.00
2015	\$1,234.22
2016	\$2,174.14
2017	\$2,221.70

# Observation Big Hospital Payments in 2017

## What's the Catch?

### Comprehensive APC

- Bundling: Most Labs, ancillaries, radiology, procedures...

Observation  
Now A Mini DRG



What's Included? Everything!  
Labs, CT, US, most procedures, IVF, Meds  
Except (S,I, F,G,H,L,U)

TABLE 7.—COMPREHENSIVE APC PAYMENT POLICY  
EXCLUSIONS FOR CY 2016

Ambulance services;
Brachytherapy;
Diagnostic and mammography screenings;
Physical therapy, speech-language pathology and occupational therapy services - Therapy services reported on a separate facility claim for recurring services;
Pass-through drugs, biologicals, and devices;
Preventive services defined in 42 CFR 410.2: <ul style="list-style-type: none"> <li>• Annual wellness visits providing personalized prevention plan services</li> <li>• Initial preventive physical examinations</li> <li>• Pneumococcal, influenza, and hepatitis B vaccines and administrations</li> <li>• Mammography Screenings</li> <li>• Pap smear screenings and pelvic examination screenings</li> <li>• Low Dose Computed Tomography</li> <li>• Prostate cancer screening tests</li> <li>• Colorectal cancer screening tests</li> <li>• Diabetes outpatient self-management training services</li> <li>• Bone mass measurements</li> <li>• Glaucoma screenings</li> <li>• Medical nutrition therapy services</li> <li>• Cardiovascular screening blood tests</li> <li>• Diabetes screening tests</li> <li>• Ultrasound screenings for abdominal aortic aneurysm</li> <li>• Additional preventive services (as defined in section 1861(ddd)(1) of the Act);</li> </ul>
Self-administered drugs (SADs) - Drugs that are usually self-administered and do not function as supplies in the provision of the comprehensive service;
Services assigned to OPPS status indicator "F" (certain CRNA services, Hepatitis B vaccines and corneal tissue acquisition);
Services assigned to OPPS status indicator "L" (influenza and pneumococcal pneumonia vaccines); and
Certain Part B inpatient services – Ancillary Part B inpatient services payable under Part B when the primary "J1" service for the claim is not a payable Medicare Part B inpatient service (for example, exhausted Medicare Part A benefits, beneficiaries with Part B only)

# Conclusions



- Observation services will be an expanding determinant of our success in bringing value to health care delivery
- Documentation requirements are meaningful and require provider education
- Patient financial responsibility is frequently less than if they are an inpatient
- Under the comprehensive APC process the facility receives a single bundled payment for Observation

## Contact Information

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Questions? Contact the E-QUAL team at [equal@acep.org](mailto:equal@acep.org)

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