

## **Data Supplement S2. Suggested reading list for observation medicine curriculum**

### **PGY-1:**

#### *Core references:*

Ross MA, Aurora T, Graff L, Suri P, O'Malley R, Ojo A, et al. State of the Art: Emergency Department Observation Units. *CritPathwCardiol* 2012;11:128-38.

Wiler, JL, Ross MA, Ginde AA. National study of emergency department observation services. *Acad Emerg Med* 2011;18:959-65.

Graff, LG. *Observation MEDICINE* The Healthcare System's Tincture of Time. (online textbook)

Emory Clinical Decision Unit Manual Emory University School of Medicine, Department of Emergency Medicine: CDU Manual. Ross MA, Wheatley M, Leach G, O'Malley R, Osborne A. electronic media, Macintosh i-Book. 2012.

### **PGY-2:**

#### *Chest Pain:*

Hess EP, Brison RJ, Perry JJ, Calder LA, Thiruganasambandamoorthy V, Agarwal D, et al. Development of a clinical prediction rule for 30-day cardiac events in emergency department patients with chest pain and possible acute coronary syndrome. *Ann Emerg Med* 2012;59:115-25 e1.

Reilly BM, Evans AT, Schaidler JJ, Das K, Calvin JE, Moran LA, et al. Impact of a clinical decision rule on hospital triage of patients with suspected acute cardiac ischemia in the emergency department. *JAMA* 2002;288:342-50.

Keller T, Zeller T, Peetz D, Tzikas S, Roth A, Czyz E, et al. Sensitive troponin I assay in early diagnosis of acute myocardial infarction. *N Engl J Med* 2009;361:868-77.

Reichlin T, Hocholzer W, Bassetti S, Steur S, Stelzig C, Hartwiger S, et al. Early diagnosis of myocardial infarction with sensitive cardiac troponin assays. *N Engl J Med* 2009;361:858-67.

Amsterdam EA, Kirk JD, Bluemke DA, Diercks D, Farkouh ME, Garvey JL. Testing of low-risk patients presenting to the emergency department with chest pain: a scientific statement from the American Heart Association. *Circulation* 2010;122:1756-76.

El-Hayek G, Benjo A, Utresky S, Al-Mallah M, Cohen R, Bamira D, et al. Meta-analysis of coronary computed tomography angiography versus standard of care strategy for the evaluation of low risk chest pain: are randomized controlled trials and cohort studies showing the same evidence? *Int J Cardiol* 2014;177:238-45.

Raff GL, Chinnaiyan KM, Cury RC, Garcia MT, Hecht HS, Hollander JE, et al. SCCT guidelines on the use of coronary computed tomographic angiography for patients presenting with acute chest pain to the emergency department: a report of the Society of Cardiovascular Computed Tomography Guidelines Committee. *J Cardiovasc Comput Tomogr* 2014;8:254-71.

*Asthma:*

McDermott MF, Murphy DG, Zalenski RJ, Rydman RJ, McCarren M, Marder D, et al. A comparison between emergency diagnostic and treatment unit and inpatient care in the management of acute asthma. *Arch Intern Med* 1997 157: 2055-62.

Rydman RJ, Isola ML, Roberts RR, Zalenski RJ, McDermott MF, Murphy DG, et al. Emergency Department Observation Unit versus hospital inpatient care for a chronic asthmatic population: a randomized trial of health status outcome and cost. *Med Care* 1998 36:599-609.

*Transient ischemic attack:*

Ross MA, Compton S, Medado P, Fitzgerald M, Kilanowski P, O'Neil BJ. An Emergency Department Diagnostic Protocol for Patients With Transient Ischemic Attack: A Randomized Controlled Trial. *Ann Emerg Med* 2007;50:109-19.

Nahab F, Leach G, Kingston C, Mir O, Abramson J, Hilton S, et al. Impact of an Emergency Department Observation Unit Transient Ischemic Attack Protocol on Length of Stay and Cost. *J Stroke Cerebrovasc Dis.* 2012;21:673-8.

Ross M, Nahab F. Management of transient ischemia attacks in the twenty-first century. *Emerg Med Clin North Am* 2009;27: 51-69, viii.

*Atrial Fibrillation:*

Decker WW, Smars PA, Vaidyanathan L, Gayal DG, Boie ET, Stead LG, et al. A prospective, randomized trial of an emergency department observation unit for acute onset atrial fibrillation. *Ann Emerg Med* 2008;52(4): 322-8.

*Syncope:*

Sun BC, McCreath H, Liang L, Bohan S, Baugh C, Ragsdale L, et al. Randomized Clinical Trial of an Emergency Department Observation Syncope Protocol Versus Routine Inpatient Admission. *Ann Emerg Med* 2014;64:167-75.

Shen WK, Decker WW, Smars PA, Goyal DG, Walker AE, Hodge DO, et al. Syncope Evaluation in the Emergency Department Study (SEEDS): a multidisciplinary approach to syncope management. *Circulation* 2004;110: 3636-45.

*Congestive Heart Failure:*

Collins SP, Pang PS, Fonarow GC, Yancy CW, Bonow RO, Gheorghide M. Is hospital admission for heart failure really necessary: the role of the emergency department and observation unit in preventing hospitalization and rehospitalization. *J Am Coll Cardiol* 2013;61:121-6.

Peacock WF, Fonarow GC, Ander DS, Maisel A, Hollander JE, Januzzi JL, et al. Society of Chest Pain Centers Recommendations for the evaluation and management of the observation stay acute heart failure patient: a report from the Society of Chest Pain Centers Acute Heart Failure Committee. *CritPathwCardiol*. 2008;7:83-6.

Collins SP, Lindsell CJ, Naftilan AJ, Peacock WF, Diercks D, Hiestand B, et al. Low-risk acute heart failure patients: external validation of the Society of Chest Pain Center's recommendations. *CritPathwCardiol*. 2009;8:99-103.

*Pediatrics:*

Conners GP, Melzer SM, Betts JM, Chitkara MB, Jewell JA, Lye PS, et al. Pediatric observation units. *Pediatrics* 2012;130:172-9.

Macy ML, Kim CS, Sasson C, Lozon MM, Davis MM. Pediatric observation units in the United States: A systematic review. *J Hosp Med* 2010;5:172-82.

*Geriatrics:*

Caterino JM, Hoover EM, Moseley MG. Effect of advanced age and vital signs on admission from an ED observation unit. *Am J Emerg Med* 2012

Ross MA, Compton S, Richardson D, Jones R, Nittis T, Wilson. The use and effectiveness of an emergency department observation unit for elderly patients. *Ann Emerg Med* 2003;41: 668-77.

**PGY-3/4:**

*Health Policy:*

ACEP Policy: Emergency department observation services. *Ann Emerg Med* 2008;51:686.

CMS Hospital Payment (2010): Medicare Claims Processing Manual, Chapter 4 - Part B Hospital (Including Inpatient Hospital Part B and OPPTS). Section 290 Outpatient Observation Services. <http://www.cms.gov/Regulations-and-Guidance/Guidance/Manuals/downloads/clm104c04.pdf>. Accessed April 27, 2015.

AMA (2015). Evaluation and Management (E/M) Service Guidelines. Current Procedural Terminology 2015, Professional Edition. A. J. Abraham M, Anderson C, et al. Chicago, Ill, AMA.

*Financial Issues:*

Baugh CW, Bohan JS. Estimating observation unit profitability with options modeling. *Acad Emerg Med* 2008;15:445-52.

Baugh CW, Venkatesh AK, Bohan JS. Emergency department observation units: A clinical and financial benefit for hospitals. *Health Care Manage Rev* 2011;36:28-37.

### *Unit Management:*

Peacock F, Beckley P, Clark C, Disch M, Hewins K, Hunn D, et al. Recommendations for the evaluation and management of observation services: a consensus white paper: the society of cardiovascular patient care. *Crit Pathw Cardiol* 2014;13:136-98.

Ross MA, Aurora T, Graff L, Suri P, O'Malley R, Ojo A, et al. State of the Art: Emergency Department Observation Units. *CritPathwCardiol*. 2012;11:128-38.

Hostetler B, Leikin JB, Timmons JA, Hanashiro PK, Kissane K. Patterns of use of an emergency department-based observation unit. *Am J Ther*. 2002;9:499-502.

Ross MA, Hemphill RR, Abramson J, Schwab K, Clark C. The recidivism characteristics of an emergency department observation unit. *Ann Emerg Med* 2010;56:34-41.

Leykum LK, Huerta V, Mortensen E. Implementation of a hospitalist-run observation unit and impact on length of stay (LOS): a brief report. *J Hosp Med* 2010;5(9): E2-5.

### *National Policy Issues:*

Ross MA, Hockenberry JM, Mutter R, Barrett M, Wheatley M, Pitts SR. Protocol-Driven Emergency Department Observation Units Offer Savings, Shorter Stays, And Reduced Admissions. *Health Affairs* 2013;32:2149-56.

Ventatesh AK, Suter LG. Observation “services” and observation “care” – one word can mean a world of difference. *Health Serv Res* 2014;49:1083-7.

Feng Z, Wright B, Mor V. Sharp rise in medicare enrollees being held in hospitals for observation raises concerns about causes and consequences. *Health Aff* 2012;31:1251-9.

Baugh CW, Venkatesh AK, Hilton JA, Samuel PA, Schuur JD, Bohan JS. Making greater use of dedicated hospital observation units for many short-stay patients could save \$3.1 billion a year. *Health Aff* 2012;31:2314-23.

### **Web-based Resources**

[www.obsprotocols.org](http://www.obsprotocols.org) - wiki site with sample protocols

[www.acep.org/observationsection/](http://www.acep.org/observationsection/) - ACEP observation medicine section with an online textbook and sample protocols