ASA Physical Status Classification System

Universal but Inconsistent

Georgeanne Alexis Raftopoulos, DO
Anesthesia Consultants Inc.
ASA Physical Status Classification System

- To explain the “definition” of each ASA classification
- Clarify the reasoning behind the inconsistency between anesthesiologist
ASA Physical Status Classification System

Goals and Objectives

- Definition
- History
- Importance
- Billing
- Statistics
- Outcomes
- Anesthesia Physical Status
- HFHS Survey
- Example Cases and Discussion
- Conclusion
ASA Physical Status Classification System

Definition

• The purpose of the ASA system is to simplify and assess the “physical status” of the patient prior to surgery.

• The ASA classification is used for record keeping, for communication between colleagues, billing (based on state), and uniform system for statistical analysis.
ASA Physical Status Classification System Definition 2012

- ASA Physical Status 1 - A normal Healthy patient
- ASA Physical Status 2 - A patient with mild systemic disease
- ASA Physical Status 3 - A patient with severe systemic disease
- ASA Physical Status 4 - A patient with severe systemic disease that is a constant threat to life
- ASA Physical Status 5 - A moribund patient who is not expected to survive without the operation
- ASA Physical Status 6 - A declared brain-dead patient whose organs are being removed for donor purposes

These definitions appear in each annual edition of the ASA Relative Value Guide. There is no additional information that will help you further define these categories.
ASA Physical Status Classification System
Definition 2014

- ASA I - Healthy, non-smoking, nor or minimal alcohol use
- ASA II - Mild disease without substantive functional limitations
- ASA III - Substantive functional limitations; One or more moderate to severe disease
- ASA IV - A patient with severe systemic disease that is a constant threat to life
- ASA Physical Status 5 - A moribund patient who is not expected to survive without the operation
- ASA Physical Status 6 - A declared brain-dead patient whose organs are being removed for donor purposes

These definitions appear in each annual edition of the ASA Relative Value Guide.® There is no additional information that will help you further define these categories.

<http://www.asahq.org/For-Members/Clinical-Information/ASA-Physical-Status-Classification-System.aspx>
ASA Physical Status Classification System

History

- 1941 - three physicians devised study to examine, experiment, and devise a system for collection and tabulation of statistical data in anesthesia that could be applicable in any circumstance.

  — Meyer Sakland, MD, Emery Rovenstine, MD, and Ivan Taylor, MD

- 1st attempt was to stratify risk of patient but was determined that that could not be done.

Lana, Mark J. “Using the ASA Physical Status Classification May Be a Risk Business.” ASA Newsletter. 66.9 (Sept 2002).
ASA Physical Status Classification System

History

• 6 point scale
  – Ranging from healthy patient (class 1) to one with an extreme systemic disorder that is imminent to life (class 4)
  – Last two classes were for emergency. Class 5 was emergency for class 1 and 2, class 6 emergency for 3 and 4

Lana, Mark J. “Using the ASA Physical Status Classification May Be a Risk Business.” ASA Newsletter, 66.9 (Sept 2002).
ASA Physical Status Classification System

History

- 1963-The Dripps system was developed. Class 5 and 6 were dropped and E for emergency was added.
- Class 5 was added for a moribund patient who is not expected to survive without the operation in 24 hours.
- 1983-Class 6 was added

Lana, Mark J. “Using the ASA Physical Status Classification May Be a Risk Business.” ASA Newsletter. 66.9 (Sept 2002).
ASA Physical Status Classification System

History

• If the surgery is an emergency then the physical status classification is followed by “E”.

• Class 5 is usually an emergency and is therefore usually “5E”

• 6E does not exist, all organ retrieval in brain-dead patients is done urgently
ASA Physical Status Classification System

History

- Emergency was originally defined as a “surgical procedure which, in surgeon’s opinion, should be performed without delay”
  - Schedule manipulation
ASA Physical Status Classification System
History

- **ASA Physical Status 1**: A normal healthy patient
- **ASA Physical Status 2**: A patient with mild systemic disease
- **ASA Physical Status 3**: A patient with severe systemic disease
- **ASA Physical Status 4**: A patient with severe systemic disease that is constant threat to life
- **ASA Physical Status 5**: A moribund patient who is not expected to survive without the operation
- **ASA Physical Status 6**: A declared brain-dead patient whose organs are being removed for donor purposes
Importance
ASA Physical Status Classification System

Importance

- Billing

- Base Value
  - per procedure code which follows diagnostic code
  - 5 digit code giving rise to units for specific case

- Duration Anesthesia

- Modifiers

ASA Physical Status Classification System

Importance

- PS 1 and 2 no additional units
- PS 3 one additional unit
- PS 4 two additional units
- PS 5 three additional units
- PS 6 no units

Units are then added together and multiplied by pay per insurance

- (Base units + Duration Units + Modifiers) x pay
ASA Physical Status Classification System

Importance

- ASA Physical Status and Age Predict Morbidity After Three Surgical Procedures
- Preoperative Pulmonary Risk Stratification for Non-Cardiothoracic Surgery: Systematic Review for the American College of Physicians
- National Surgical Quality Improvement Program (NSQIP) Risk Factors Can Be Used to Validate American Society of Anesthesiologist Physical Status Classification (ASA PS) Levels


ASA Physical Status Classification System

Importance

National Surgical Quality Improvement Program (NSQIP)

- "ASA PS could be proposed as a single strong predictor for surgical outcomes, however, with a high potential for inaccuracy due to its imprecision and inconsistency. For instance, if a hospital’s outcomes were to be risk-adjusted using ASA PS then compared with a competitor that listed erroneously inflated ASA PS values, the former hospital would be at a disadvantage. Because of the potential financial and patient access impact of erroneous assessments of quality, a method for validating ASA PS level is needed."

ASA Physical Status Classification System

HFHS Anesthesia Physical Status

• Summary
  • Important for Billing, Statistics, Hospital Ranking, and Post Operative Outcomes

• Study
  • To create a consistency amongst the Henry Ford Anesthesiology Department for Physical Status classification
  • Guideline provided to create a standard of care
ASA Physical Status Classification System

HFHS Anesthesia Physical Status

- Cleveland Clinic Physical Status Model
- Best explanations that was published
- One of the Top 4 Hospitals in the US
- Top cardiac care from 1994-2012
- *The Preoperative Evaluation Form: Assessment of Quality From One Hundred Thirty-Eight Institutions and Recommendations for a High-Quality Form*


<http://www.dhed.net/ASA%20Physical%20Status%20Classification%20SYSTEM.htm>
ASA Physical Status Classification System

HFHS Anesthesia Physical Status

<table>
<thead>
<tr>
<th>ASA PS Category</th>
<th>Preoperative Health Status</th>
<th>Comments, Examples</th>
</tr>
</thead>
<tbody>
<tr>
<td>ASA PS 1</td>
<td>Normal healthy patient</td>
<td>No organic, physiologic, or psychiatric disturbance; excludes the very young and very old; healthy with good exercise tolerance</td>
</tr>
<tr>
<td>ASA PS 2</td>
<td>Patients with mild systemic disease</td>
<td>No functional limitations; has a well-controlled disease of one body system; controlled hypertension or diabetes without systemic effects, cigarette smoking without chronic obstructive pulmonary disease (COPD); mild obesity, pregnancy</td>
</tr>
<tr>
<td>ASA PS 3</td>
<td>Patients with severe systemic disease</td>
<td>Some functional limitation; has a controlled disease of more than one body system or one major system; no immediate danger of death; controlled congestive heart failure (CHF), stable angina, old heart attack, poorly controlled hypertension, morbid obesity, chronic renal failure; bronchospastic disease with intermittent symptoms</td>
</tr>
<tr>
<td>ASA PS 4</td>
<td>Patients with severe systemic disease that is a constant threat to life</td>
<td>Has at least one severe disease that is poorly controlled or at end stage; possible risk of death; unstable angina, symptomatic COPD, symptomatic CHF, hepatorenal failure</td>
</tr>
<tr>
<td>ASA PS 5</td>
<td>Moribund patients who are not expected to survive without the operation</td>
<td>Not expected to survive &gt; 24 hours without surgery; imminent risk of death; multiorgan failure, sepsis syndrome with hemodynamic instability, hypothermia, poorly controlled coagulopathy</td>
</tr>
<tr>
<td>ASA PS 6</td>
<td>A declared brain-dead patient who organs are being removed for donor purposes</td>
<td></td>
</tr>
</tbody>
</table>

*ASA PS classifications from the American Society of Anesthesiologists

Cleveland Clinic. 1995-2010. The Cleveland Clinic Foundation. Sept 9, 2012 <my.clevelandclinic.org/services/anesthesia/hic_asa_physical_classification_system.aspx>
ASA Physical Status Classification System
HFHS Survey

• Respondents
  • 24 Anesthesia Senior Staff
  • 35 Anesthesia Residents
  • 37 CRNA
  • 39 Surgery Senior Staff
  • 32 Surgery Residents
  • 1 Post-op Nurse
ASA Physical Status Classification System
HFHS Survey

- 95.24% Responded that they were familiar with ASA PS
- Only 10% stated that they gave higher ASA PS scores than their peers
- 82% said they followed a specific guideline (aka. ASA, or Cleveland Clinic)
- 90% believed Anesthesia Senior staff were responsible for the ASA PS of a patient
  - 3.5% said anesthesia resident, 5.9% surgery senior staff and 1 person said surgery resident
- Only 59% believed that the ASA PS was very important
A 53 year old female marathon runner who tripped yesterday presents for operation to repair humerus fracture:

- PS 1* 80.95%
- PS 2 16.67%
- PS 3 2.38%
ASA Physical Status I

- Normal Healthy Patient

- NO organic, physiologic, or psychiatric disturbance; excludes the very young and very old; healthy with good exercise tolerance
A 90 yo female with hip fracture presents for orthopedic repair:

- PS 1: 9.52%
- PS 2*: 28.57%
- PS 3: 42.86%
- PS 4: 14.29%
- PS 5: 4.76%
A 56 yo male with history of well controlled hypertension presents for elective laparoscopic cholecystectomy:

- PS 1 0.60%
- PS 2* 90.48%
- PS 3 8.93%
ASA PS 2

- Patients with mild systemic disease

- No functional limitations; has a well-controlled disease of ONE body system

- Controlled hypertension OR diabetes (not on insulin) without systemic effects

- Cigarette smoking WITHOUT COPD

- Mild obesity (BMI <30)
A 21 yo pregnant female with breech presentation presents for operative delivery of newborn (c-section):

- PS 1 30.36%
- PS 2* 50.60%
- PS 3 13.69%
- PS 4 3.57%
- PS 5 1.79%
A 38 yo male with severe anxiety, taking Valium daily, for gastrointestinal endoscopy:

- PS 1  17.86%
- PS 2*  60.12%
- PS 3  19.64%
- PS 4  2.38%
A 6 week old male presents with pyloric stenosis for repair:

- PS 1 14.88%
- PS 2* 43.45%
- PS 3 27.98%
- PS 4 8.93%
- PS 5 3.57%
- PS 6 1.19%
A 10 yo girl presents for a tonsillectomy and adenoidectomy for sleep apnea:

- PS 1  19.05%
- PS 2*  57.74%
- PS 3  20.83%
- PS 4  1.79%
- PS 5  0.60%
A 68 yo male with a 38 pack year smoking history presents for an inguinal hernia repair:

- PS 1  1.79%
- PS 2  57.14%
- PS 3*  35.12%
- PS 4  5.95%
A 19 yo male who reports occasional smoking of marijuana, but denies other drug and alcohol abuse, presents for right carpal tunnel surgery:

- PS 1          39.88%
- PS 2*       56.55%
- PS 3            2.38%
- PS 4            0.60%
- PS 5            0.60%
A 30 yo pregnant patient with symptomatic asthma for operative delivery of the newborn (c-section):

- PS 1 0%
- PS 2 26.79%
- PS 3* 66.07%
- PS 4 5.36%
- PS 5 1.79%
ASA PS 3

- Patient with severe systemic disease
- Some functional limitation; has a controlled disease of MORE than one body system or one Major system
- No immediate danger of death
- Controlled/compensated congestive heart failure, stable angina, old heart attack, poorly controlled hypertension, morbid obesity, chronic renal failure; bronchospastic disease
A 25 yo female with history of well controlled asthma, in need of labor epidural:

- **PS 1** 2.38%
- **PS 2** 84.52%
- **PS 3** 11.31%
- **PS 4** 1.19%
- **PS 5** 0.60%
A 21yo female with BMI 32 having an emergency appendectomy:

- PS 1E 2.98%
- PS 2E 56.55%
- PS 3E* 33.93%
- PS 4E 5.36%
- PS 5E 1.19%
A 55 yo female with symptomatic congestive heart failure presents for pacemaker insertion:

- PS 1 0%
- PS 2 1.19%
- PS 3 32.73%
- PS 4* 61.31%
- PS 5 4.17%
- PS 6 0.60%
ASA PS 4

- Patients with severe systemic disease that is a constant threat to life
- Has at least ONE severe disease that is poorly controlled or at end stage
- Possible risk of death
- Unstable angina, or decompensated or symptomatic CHF
- Symptomatic COPD
A 65 yo male history of diabetes and old heart attack presents for coronary artery bypass graft:

- PS 1: 0%
- PS 2: 1.79%
- PS 3: 45.24%
- PS 4*: 45.83%
- PS 5: 5.36%
- PS 6: 1.79%
A 40 yo male with sepsis syndrome, on vasopressor infusions, presents for wound incision and debridement:

- PS 1 0%
- PS 2 0.60%
- PS 3 2.98%
- PS 4 51.19%
- PS 5* 42.26%
- PS 6 2.98%
A 62 yo female with multi organ failure presents for tracheostomy:

- PS 1 0%
- PS 2 1.19%
- PS 3 1.19%
- PS 4 37.50%
- PS 5* 55.95%
- PS 6 4.17%
ASA PS 5

- Moribund patients who are not expected to survive > 24 hrs without the operation
- Imminent risk of death
- Multi-organ failure
- Sepsis syndrome with hemodynamic instability
- Hypothermia
- Poorly controlled coagulopathy
A brain-dead 32 yo male now donating organs for transplant:

- PS 1          1.79%
- PS 2          2.38%
- PS 3          2.98%
- PS 4          1.19%
- PS 5          8.33%
- PS 6*        83.33%
ASA PS 6

- A declared brain-dead patient who organs are being removed for donor purposes
ASA Physical Status Classification System
Example Cases and Discussion
An 90 year old female, plays tennis once a week, takes only a multivitamin daily, for cataract surgery:

A) PS 1  
B) PS 2  
C) PS 3  
D) PS 4  
E) PS 5  
F) PS 6
A 24 year old for dilatation and curettage, seven weeks after last menstrual period, vaginal bleeding, otherwise wise health with a Hgb 9.8:

A) PS 1
B) PS 2
C) PS 3
D) PS 4
E) PS 5
F) PS 6
A 37 year old male with a BMI 41, for inguinal hernia repair:

A) PS 1
B) PS 2
C) PS 3
D) PS 4
E) PS 5
F) PS 6
A 56 year old female who states she quit smoking yesterday, but smoked “maybe half a ppd for 30 yrs.”, for vaginal sling placement:

- A) PS 1
- B) PS 2
- C) PS 3
- D) PS 4
- E) PS 5
- F) PS 6
A 3 month old male born at 28 weeks for a bilateral inguinal hernia repair:

A) PS 1  
B) PS 2  
C) PS 3  
D) PS 4  
E) PS 5  
F) PS 6
ASA Physical Status Classification System

Conclusion

- ASA Physical Status went through several changes through its development
- Important: Billing, Statistics, Hospital Ranking, and Postoperative Outcomes
- Important to create a consistency and standard of care throughout the department
References


- Lana, Mark J. “Using the ASA Physical Status Classification May Be a Risk Business.” ASA Newsletter. 66.9 (Sept 2002).


- **Cleveland Clinic**, 1995-2010. The Cleveland Clinic Foundation. Sept 9, 2012 <my.clevelandclinic.org/services/anesthesia/hic_asa_physical_classification_system.aspx>