AMERICAN SOCIETY OF PLASTIC SURGEONS (ASPS)

# Abdominoplasty and Panniculectomy

Performance Measurement Set

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Not for Distribution



***ASPS Approved :***

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## Intended Audience, Care Setting and Patient Population

These measures are designed for use by physicians and other health care professionals who provide plastic surgery services to patients 18 and older.

*These measures are meant to be used to calculate performance and/or reporting at the individual clinician level.*

## Importance of Topic

***Incidence, Prevalence, & Cost***

***Abdominboplasty/Panniculectomy***

Abdominoplasty was the sixth-most commonly performed cosmetic surgery in the US in 2016, an increase of 104% since 2000 (ASPS NCPSS 2016). Abdominoplasty is associated with a higher complication rate compared with other aesthetic procedures (Winocour et al 2015). Panniculectomy is a common reconstructive procedure performed to remove a pannus, or hanging flap of loose skin and fat, from the abdomen. Panniculectomy surgery is typically performed following massive weight loss. Unlike abdominoplasty, a panniculectomy does not involve abdominal muscle tightening. Review of the 2014-2016 TOPS data revealed that panniculectomy was associated with the highest rate of unplanned hospital admissions (ASPS TOPS ad hoc analysis 2017).

## Technical Specifications: Introduction

The performance measures found in this document have been developed to enable the physician to track his or her performance in individual patient care across patient populations. ***Please note that the***

***provision of surgical procedures must be based on individual patient needs and professional judgment.***
Performance measures are not to be used as a substitute for clinical guidelines and individual physician clinical judgment. There may be instances where an individual patient falls outside the parameters for the performance measure(s); however, this does **not** necessarily mean that they should not have the procedure. Whether or not a patient should undergo a specific procedure is a decision that needs to be made between the patient and the physician while weighing the risks and benefits of the procedure, along with individual patient preference.

There are several data sources available for collecting performance measures; generally different data sources require different sets of measure specifications, due to the structure of the systems storing the data.

Quality measure technical specifications for administrative data sources are developed with administrative code sets –ICD-10-CM and CPT®, for example. A measure intended for administrative data source use or reporting may have significant differences in the specifications due to the nature of the various data sources. In administrative data sources, administrative or billing codes are typically used to identify eligible populations and reported immediately following the provision of care.

## Measure Exceptions

**Measure Exclusions**
ASPS follows the PCPI® process of distinguishing between measure exceptions and measure exclusions (PCPI® 2013). Exclusions arise when the intervention required by the numerator is not appropriate for a group of patients who are otherwise included in the initial patient or eligible population of a measure (ie, the denominator). Exclusions are absolute and are to be removed from the denominator of a measure and therefore clinical judgment does not enter the decision.

**Measure Exceptions**
Exceptions are used to remove a patient from the denominator of a performance measure when the patient does not receive a therapy or service AND that therapy or service would not be appropriate due to patient-specific reasons. The patient would otherwise meet the denominator criteria. Exceptions are not absolute, and are based on clinical judgment, individual patient characteristics, or patient preferences.

For process, structural, and outcome measures, the PCPI® provides two categories of exception reasons for which a patient may be removed from the denominator of an individual measure.

**Medical reason(s)**
- Contraindicated in patient (potential allergy due to previous reported allergic history, potential adverse drug interaction, other)
- Already received/performed
- Intolerant (therapy was tried and the patient was intolerant)
- Other medical reason(s)

**Patient or Non-medical reason(s)**
- Patient refused/declined
- Access issues or insurance coverage/payer-related limitations (patient not covered for treatment)

- Patient functional limitations
- Patient preference: Social reason(s) (eg, family or support system not supportive of intervention/treatment); Religious

These measure exception categories are not available uniformly across all measures; for each measure, there must be a clear rationale to permit an exception for a medical, patient, or system reason. For some measures, examples have been provided in the measure exception language of instances that would constitute an exception. Examples are intended to guide clinicians and are not all-inclusive lists of all possible reasons why a patient could be excepted from a measure. There are different approaches for reporting measure exceptions, depending on whether the measure is being reported from an electronic clinical data source or an administrative data source.

Administrative Data Sources
Exceptions reported from administrative data sources can be reported using a Quality Data Code (QDC), which may be a CPT® Category II code or a G-code.

Although this methodology does not require the external reporting of more detailed exception data, the PCPI® recommends that physicians document the *specific* reasons for exception in patients' medical records for purposes of optimal patient management and audit-readiness. The PCPI® also advocates the systematic review and analysis of each physician's exceptions data to identify practice patterns and opportunities for quality improvement. For example, it is possible for implementers to calculate the percentage of patients that physicians have identified as meeting the criteria for exception.

Please refer to documentation for each individual measure for information on the acceptable exception categories and the codes and modifiers to be used for reporting.

**This measure may be used for accountability purposes**

**Measure #1: Seroma rate after primary panniculectomy**

## Measure Description

Percentage of patients aged 18 years and older who undergo primary panniculectomy who develop seroma requiring drainage within 30 days of initial procedure.

## Measure Components

| | |
|---|---|
| **Numerator Statement** | Patients who develop seroma requiring drainage within 30 days of initial procedure |
| **Denominator Statement** | All patients aged 18 years and older who undergo primary panniculectomy |
| **Exclusions** | Combined procedures in abdominal area (including hernia repair, liposuction, c-section, and hysterectomy) |
| **Denominator Exceptions** | None |
| **Measure Importance** | Rationale/Opportunity for Improvement:<br>A seroma is the collection of the watery portion of the blood around the implant or around the incision. While the body absorbs small seromas, large ones will require the placement of surgical drains for proper healing. A small scar can result from surgical draining.<br><br>Early or improper removal of sutures can sometimes lead to formation of seroma or discharge of serous fluid from operative areas. Seromas are particularly common after abdominal surgeries. The larger the surgical intervention, the more likely it is that seromas appear. Larger seromas take longer to resolve than small seromas, and are more likely to undergo secondary infection.<br><br>GAP IN CARE:<br>The literature reports seroma rates of around 10% for panniculectomy patients (Zemlyak et al 2012; Zannis et al 2012). |

## Measure Designation

| | |
|---|---|
| **Measure Purpose** | • Quality Improvement<br>• Accountability |
| **Type of Measure** | • Outcome |
| **Care Setting** | • Inpatient or Surgical Center |
| **Data Source** | • Medical record |

**Measure #2: Seroma rate after primary abdominoplasty**

## Measure Description

Percentage of patients aged 18 years and older who undergo primary abdominoplasty who develop seroma requiring drainage within 30 days of initial procedure

## Measure Components

| | |
|---|---|
| **Numerator Statement** | Patients who develop seroma requiring drainage within 30 days of initial procedure |
| **Denominator Statement** | All patients aged 18 years and older who undergo primary abdominoplasty |
| **Exclusions** | Combined procedures in abdominal area (including hernia repair, liposuction, c-section, and hysterectomy) |
| **Denominator Exceptions** | None |

## Measure Importance

| | |
|---|---|
| **Rationale/ Opportunity for Improvement** | Abdominoplasty is one of the most frequently performed cosmetic procedures (ASPS NCPSS 2016), and seroma is the most common complication of abdominoplasty (Ardehali & Fiorentino 2017; Seretis et al 2017).<br><br>Abdominoplasty was the sixth-most commonly performed cosmetic surgery in the US in 2016, an increase of 104% since 2000 (ASPS NCPSS 2016). Abdominoplasty is associated with a higher complication rate compared with other aesthetic procedures, and seroma is most common complication in abdominoplasty (Bercial et al 2012; Hurvitz et al 2014).<br><br><u>GAP IN CARE</u><br>In a 2017 meta-analysis of seroma rate, seroma rate was found to be 7.5% in a prevention group that utilized interventions to prevent seroma, such as preservation of Scarpa's fascia, tissue adhesives and, and progressive tension sutures) and 19.5% in a control group where no interventions were used (Seretis et al 2017). |

## Measure Designation

| | |
|---|---|
| **Measure Purpose** | • Quality Improvement |
| **Type of Measure** | • Outcome |
| **Care Setting** | • Inpatient or Surgical Center |
| **Data Source** | • Medical record |

**This measure may be used for accountability purposes**

**Measure #3 Wound disruption rate after primary panniculectomy**

## Measure Description

Percentage of patients aged 18 years and older who undergo primary panniculectomy who develop moderate or severe wound disruption within 30 days of initial procedure

This measure is reported as two rates stratified by BMI:

•Reporting Criteria 1: BMI < 35

•Reporting Criteria 2: BMI ≥ 35

| | |
|---|---|
| **Numerator Statement** | Patients who develop moderate or severe wound disruption within 30 days of initial procedure<br>Definitions:<br>Moderate wound disruption- healed in 2 to 6 weeks<br>Severe wound disruption- healed in more than 6 weeks |
| **Denominator Statement** | All patients aged 18 years and older who undergo primary panniculectomy<br>Denominator Criteria (Eligible Cases):<br>REPORTING CRITERIA 1: Patients with BMI < 35 on date of procedure<br>REPORTING CRITERIA 2: Patients with BMU > or = 35 on date of procedure |
| **Exclusions** | Combined procedures in abdominal area (including hernia repair, liposuction, c-section, and hysterectomy) |
| **Denominator Exceptions** | None |

## Measure Importance

| | |
|---|---|
| **Rationale/ Opportunity for Improvement** | Wound Disruption can be Superficial (defined as disruption of dermal and subcutaneous layers) OR Deep/Fascia (defined as disruption of deep fascial layers w/without superficial layers). Postoperative wound dehiscence impacts morbidity, length of stay, healthcare costs and readmission rates.<br><br>The (post-weight loss) body mass index at the time of body contouring surgery is a predictor for postoperative complications. The overwhelming conclusion from multiple studies is that increasing BMI is associated with an increased number of complications and poorer outcomes. Major complications of post-bariatric panniculectomy included wound breakdown and re-exploration. The only factor that independently predicted postoperative complications after a panniculectomy was pre-panniculectomy BMI. Studies showed that complications increased at BMI > 25, 30, or 35 (Vastine et al 1999; Van der Beek et al 2011; Chetta et a l 2016; Arthurs et al 2007; Momeni et al 2009; Au et al 2008; Shanmugan et al 2015). The majority of studies used BMI > 30 as the cut point at which complication rates were seriously impacted (Van der Beek et al 2011; Momeni et al 2009; Au et al 2008), but they also lumped abdominoplasty and panniculectomy in most cases. The majority of patients undergoing panniculectomy start with a BMI greater than 30.<br><br>Thus, we have elected to stratify this measure and report 2 rates- one for patients with a BMI < 35 and one for patients with BMI $\geq$ 35. We expect that the rate of wound disruption will be much higher for patients in the higher BMI category. However, panniculectomy is still an important, and often necessary part of the process for patients undergoing bariatric surgery. The hope is that by benchmarking patients against similar populations, physicians will still continue to perform this procedure even on those patients with higher BMIs.<br><br><u>GAP IN CARE</u><br>Analysis of the 2014-2016 TOPS data revealed superficial wound disruption was the most frequently reported adverse event for panniculectomy. Rate of superficial and deep wound disruption after panniculectomy was found to be around 2% (ASPS TOPS ad hoc analysis 2017). Outcomes research using national databases can help us understand an intervention's effectiveness rather than just its efficacy (Alderman et al 2009). |

## Measure Designation

| | |
|---|---|
| **Measure Purpose** | • Quality Improvement<br>• Accountability |
| **Type of Measure** | • Outcome |
| **Care Setting** | • Inpatient or Surgical Center |
| **Data Source** | • Administrative data<br>• Medical record |

**Measure #4: Wound disruption rate after primary abdominoplasty**

## Measure Description

Percentage of patients aged 18 years and older who undergo primary abdominoplasty who develop wound disruption within 30 days of initial procedure

| | |
|---|---|
| **Numerator Statement** | Patients who are develop wound disruption |
| **Denominator Statement** | All patients aged 18 years and older who undergo primary abdominoplasty |
| **Exclusions** | Combined procedures in abdominal area (including hernia repair, liposuction, c-section, and hysterectomy) |
| **Denominator Exceptions** | Medical reasons (e.g. patient receiving antibiotics for existing infection) |

## Measure Importance

| | |
|---|---|
| **Rationale/ Opportunity for Improvement** | Wound Disruption can be Superficial (defined as disruption of dermal and subcutaneous layers) OR Deep/Fascia (defined as disruption of deep fascial layers w/without superficial layers). Postoperative wound dehiscence impacts morbidity, length of stay, healthcare costs and readmission rates. In spite of the progress in the abdominoplasty techniques, a significant complication rate is still associated with abdominoplasty including flap necrosis, seroma, hematoma, infections, wound dehiscence, and delayed healing of wound (Ghnnam et al 2016). Tracking wound disruption rates may help identify patient factors or other practice trends which may be influenced or modified.<br><br><u>GAP IN CARE</u><br>Analysis of the 2014-2016 TOPS data revealed superficial wound disruption was the most frequently reported adverse event. Rate of superficial and deep wound disruption after abdominoplasty was found to be around 1%. |

## Measure Designation

| | |
|---|---|
| **Measure Purpose** | • Quality Improvement |
| **Type of Measure** | • Outcome |
| **Care Setting** | • Inpatient or Surgical Center |
| **Data Source** | • Administrative data<br>• Medical record |

**This measure may be used for accountability purposes.**
**Measure #5: Unplanned hospital admission after panniculectomy**

## Measure Description

Percentage of patients aged 18 years and older who undergo outpatient primary panniculectomy who have an unplanned hospital admission within 30 days of initial procedure

| | |
|---|---|
| **Numerator Statement** | Patients who have an unplanned hospital admission within 30 days of initial procedure. |
| **Denominator Statement** | All patients aged 18 years and older who undergo outpatient panniculectomy |
| **Exclusions** | Combined procedures in abdominal area (including hernia repair, liposuction, c-section, and hysterectomy) |
| **Denominator Exceptions** | None |

## Measure Importance

| | |
|---|---|
| **Rationale/ Opportunity for Improvement** | Unplanned hospital admissions are costly to both healthcare delivery systems and to patients. Review of the 2014-2016 TOPS data revealed that panniculectomy was associated with the highest rate of unplanned hospital admissions (ASPS TOPS ad hoc analysis 2017). Outcomes research using national databases can help us understand an intervention's effectiveness rather than just its efficacy (Alderman et al 2009). Tracking unplanned admissions may help identify patient factors or other trends which may be influenced or modified. |

## Measure Designation

| | |
|---|---|
| **Measure Purpose** | • Quality Improvement<br>• Accountability |
| **Type of Measure** | • Outcome |
| **Care Setting** | • Surgical Center; outpatient hospital |
| **Data Source** | • Administrative data<br>• Medical record |

**This measure may be used for accountability purposes.**

**Measure #6: VTE Screening for panniculectomy and abdominoplasty patients**

## Measure Description

Percentage of patients aged 18 years and older who undergo primary panniculectomy or abdominoplasty who received screening for VTE with a validated instrument prior to their procedure

| | |
|---|---|
| **Numerator Statement** | Patients who receive screening for VTE with a validated instrument prior to their procedure<br><br>Definition: validated instrument includes 2005 Caprini Risk Assessment Model or other similarly validated model. |
| **Denominator Statement** | All patients aged 18 years and older who undergo primary panniculectomy or abdominoplasty |
| **Exclusions** | None |
| **Denominator Exceptions** | None |
| **Supporting Evidence** | We recommend that all plastic and reconstructive surgery patients should be risk-stratified for perioperative venous thromboembolism risk using a 2005 Caprini score (Figs. 8 and 9) (grade 1C). We recommend that surgeons consider chemoprophylaxis on a case-by-case basis in patients with Caprini score greater than 8 (Pannucci et al 2016).<br><br>Inpatient adult aesthetic and reconstructive plastic surgery patients who undergo general anesthesia:<br><br>*should* complete a 2005 Caprini risk factor assessment tool to stratify patients into a VTE risk category based on their individual risk factors. *Grade B*<br>OR<br>*should* complete a VTE risk-assessment tool comparable to the 2005 Caprini RAM to stratify patients into a VTE risk category based on their individual risk factors. *Grade D*<br><br>Outpatient adult aesthetic and reconstructive plastic surgery patients who undergo general anesthesia:<br><br>*Should consider* completing a 2005 Caprini risk factor assessment tool to stratify patients into a VTE risk category based on their individual risk factors. *Grade B*<br>OR<br>*Should consider* completing a VTE risk-assessment tool comparable to the 2005 Caprini RAM to stratify patients into a VTE risk category based on their individual risk factors. *Grade D*<br>(Murphy, Alderman, Gutowski 2012) |

## Measure Importance

| | |
|---|---|
| **Rationale/ Opportunity for Improvement** | Deep venous thrombosis and pulmonary embolism, together called venous thromboembolism, remain a serious national health problem. Estimates suggest that over 900,000 cases occur in the United States per year, with 300,000 deaths per year (Wakefield et al 2009). Recent literature has addressed the misconception that plastic surgery patients are all at low risk for perioperative venous thromboembolism events. In fact, an 18-fold variation in venous thromboembolism risk exists among the overall plastic and reconstructive surgery population (Pannucci 2017).<br><br>Massive weight loss patients undergoing body contouring surgery are at increased risk for VTE due to elevated BMI, presence of pulmonary comorbidities, extended operative time, multiple-site surgery, and decreased ability to ambulate postoperatively (Caprini et al 2001).<br><br>The extensively validated 2005 Caprini score is known to identify a 5- to 20-fold variation in venous thromboembolism risk among patients undergoing plastic and reconstructive surgery (Pannucci et al 2016).<br><br><u>GAP IN CARE</u><br>Despite these risk factors, 40% of surgeons performing abdominoplasty with liposuction do not use VTE prophylaxis, based on 2007 survey results ( Broughton G II et al 2007). Survey results asking plastic surgeons to report incidence of VTE in past 24 months and whether their practice had a policy for VTE prophylaxis revealed that 73% had a policy for VTE prophylaxis; however, 39% were unaware of current recommendations for VTE prophylaxis relative to plastic and reconstructive surgery (Spring & Gutowski 2006). A survey of the ASPS membership in 2011 also found variable identification of common VTE risk factors. Clavijo-Alvarez et al. found that risk factors which would score high on validated risk assessment models had a low grade of concern from the surveyed plastic surgeons performing postbariatric surgery, abdominoplasty, or panniculectomy. 48% of surgeons responding to the survey did not administer chemoprophylaxis for patients undergoing abdominoplasty or panniculectomy. This demonstrates a gap in knowledge of which patients are candidates for chemoprophylaxis. |

## Measure Designation

| | |
|---|---|
| **Measure Purpose** | • Quality Improvement<br>• Accountability |
| **Type of Measure** | • Outcome |
| **Care Setting** | • Ambulatory care |
| **Data Source** | • Administrative data<br>• Medical record |

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# APPENDIX A

## Abdominoplasty and Panniculectomy Measurement Specifications

**Coding Added May, 2017**

**Specifications for Registry Reporting**

**Measure #1: Seroma rate for primary panniculectomy**

| | |
|---|---|
| **Denominator (Eligible Population)** | All patients aged 18 years and older who undergo primary panniculectomy<br><br>Age ≥ 18 years<br><br>AND<br><br>**CPT® and HCPCS Code for Encounter:**<br><br>**15847**<br><br>15830 Panniculectomy |
| **Denominator Exclusions** | Combined procedures in abdominal area (including hernia repair, liposuction, c-section, and hysterectomy)<br><br>CPT CODES:<br><br>To be added |
| **Numerator** | Patients who develop seroma requiring drainage within 30 days of initial procedure<br><br>Captured by workflow within the ASPS QCDR |
| **Denominator Exceptions** | |

Measure #2: Seroma rate after primary abdominoplasty (QI only)

<table>
<tr><td>Denominator (Eligible Population)</td><td>All patients aged 18 years who undergo primary abdominoplasty<br><br>Age ≥ 18 years<br><br>AND<br><br>CPT® and HCPCS Code for Encounter:<br><br>15847<br><table><tr><td>15847</td><td>Abdominoplasty</td></tr></table></td></tr>
<tr><td>Denominator Exclusions</td><td>Combined procedures in abdominal area (including hernia repair, liposuction, c-section, and hysterectomy)<br>CPT CODES:<br>To be added</td></tr>
<tr><td>Numerator</td><td>Patients who develop seroma requiring drainage within 30 days of initial procedure<br><br>Captured by workflow within the ASPS QCDR</td></tr>
<tr><td>Denominator Exceptions</td><td>• None</td></tr>
</table>

**Measure #3: Wound disruption rate after primary panniculectomy**

<table>
<tr><td>Denominator (Eligible Population)</td><td>All patients aged 18 years who undergo primary panniculectomy<br>Denominator Criteria (Eligible Cases):<br>REPORTING CRITERIA 1: Patients with BMI < 35 on date of procedure<br>REPORTING CRITERIA 2: Patients with BMU > or = 35 on date of procedure<br><br>Age ≥ 18 years<br><br>AND<br><br>CPT® and HCPCS Code for Encounter:<br><br>15830<br><table><tr><td>15830</td><td>Panniculectomy</td></tr></table></td></tr>
<tr><td>Denominator Exclusions</td><td>Combined procedures in abdominal area (including hernia repair, liposuction, c-section, and hysterectomy)<br>CPT CODES:<br>To be added</td></tr>
<tr><td>Numerator</td><td>Patients who develop moderate or severe wound disruption within 30 days of initial procedure<br>Definitions:<br>Moderate wound disruption- healed in 2 to 6 weeks<br>Severe wound disruption- healed in more than 6 weeks<br><br>Captured by workflow within the ASPS QCDR</td></tr>
<tr><td>Denominator Exceptions</td><td>• None</td></tr>
</table>

**Measure #4: Wound disruption rate after primary abdominoplasty**

| | |
|---|---|
| **Denominator (Eligible Population)** | All patients aged 18 years who undergo primary abdominoplasty<br><br>Age ≥ 18 years<br><br>AND<br><br>**CPT® and HCPCS Code for Encounter:**<br><br>15847<br>15847 Abdominoplasty |
| **Denominator Exclusions** | Combined procedures in abdominal area (including hernia repair, liposuction, c-section, and hysterectomy)<br><br>CPT CODES:<br><br>To be added |
| **Numerator** | Patients who develop wound disruption within 30 days of initial procedure<br><br>Captured by workflow within the ASPS QCDR |
| **Denominator Exceptions** | • None |

**Measure #5: Unplanned hospital admission after panniculectomy**

<table>
<tr><td>Denominator (Eligible Population)</td><td>All patients aged 18 years who undergo outpatient panniculectomy<br><br>Age ≥ 18 years<br><br>AND<br><br>CPT® and HCPCS Code for Encounter:<br><br>15830<br><table><tr><td>15830</td><td>Panniculectomy</td></tr></table></td></tr>
<tr><td>Denominator Exclusions</td><td>Combined procedures in abdominal area (including hernia repair, liposuction, c-section, and hysterectomy)<br>CPT CODES:<br>To be added</td></tr>
<tr><td>Numerator</td><td>Patients who have an unplanned hospital admission within 30 day of initial procedure.<br><br>Captured by workflow within the ASPS QCDR</td></tr>
<tr><td>Denominator Exceptions</td><td>• None</td></tr>
</table>

**Measure #6: VTE Screening for panniculectomy and abdominoplasty patients**

<table>
<tr><td>Denominator (Eligible Population)</td><td>All patients aged 18 years who undergo primary panniculectomy or abdominoplasty<br><br>Age ≥ 18 years<br><br>AND<br><br>CPT® and HCPCS Code for Encounter:<br><br>15830; 15847<br><table><tr><td>15830</td><td>Panniculectomy</td></tr><tr><td>15847</td><td>Abdominoplasty</td></tr></table></td></tr>
<tr><td>Denominator Exclusions</td><td>None</td></tr>
<tr><td>Numerator</td><td>Patients who receive screening for VTE with a validated instrument prior to their procedure<br><br>Definition: validated instrument includes 2005 Caprini Risk Assessment Model or other similarly validated model..<br><br>Captured by workflow within the ASPS QCDR</td></tr>
<tr><td>Denominator Exceptions</td><td>• None</td></tr>
</table>