

HERNIA, ABDOMINAL

Includes Inguinal, Femoral, Umbilical, and Ventral Hernias; Includes Abdominal Wall Hernia Repair.

Background

This case definition was developed by the Armed Forces Health Surveillance Branch (AFHSB) for the purpose of epidemiological surveillance of abdominal hernias and hernia repair.

Clinical Description

An abdominal hernia is an abnormal protrusion of an organ or tissue through a defect in the abdominal wall. Hernias occur most frequently in the inguinal, umbilical, and femoral regions of the body and are caused by a combination of increased abdominal pressure (e.g., from obesity, heavy lifting, constipation, coughing or sneezing) and an opening or weakness in the muscle or fascia. Symptoms include an obvious swelling beneath the skin of the abdomen or groin; the swelling may be tender, may disappear when lying flat, and may be accompanied by discomfort when lifting or bending forward. Nearly all have the potential risk of becoming strangulated (i.e., having their blood supply cut off) which is considered a medical emergency.¹ As such, the recommended treatment for most hernias is surgical repair. Estimates of the incidence rates of abdominal hernias in the U.S. population suggest a 5% lifetime risk with more than 600,000 surgical repairs occurring annually in the U.S.²

Case Definition and Incidence Rules

For surveillance purposes, a case of *abdominal hernia* is defined as:

- *One hospitalization or outpatient medical encounter* with a case defining diagnosis of abdominal hernia (see ICD9 and ICD10 code lists below) in *any* diagnostic position.

For surveillance purposes, a case of *abdominal wall hernia surgical repair* is defined as:

- One incident case of abdominal hernia as defined above PLUS:
 - *One hospitalization* with a case defining procedure (PR) code for a surgical abdominal wall hernia repair (see ICD9 and ICD10 code lists below), coincident with, or subsequent to, the incident diagnosis, in *any* position; or
 - *One outpatient medical encounter* with a case defining Current Procedure Terminology (CPT) code for a surgical abdominal wall hernia repair (see CPT code list below), coincident with, or subsequent to, the incident diagnosis, in *any* position.

(continued on next page)

¹ Armed Forces Health Surveillance Branch. Incidence of Abdominal Hernias in Service Members, Active Component, U.S. Armed Forces, 2005-2014. *Medical Surveillance Monthly Report (MSMR)*; 2016 Aug; Vol 23(8): 11-15.

² Zendejas B, Ramirez T, Jones T, et al. Incidence of inguinal hernia repairs in Olmsted County, MN: a population-based study. *Ann Surg.* 2013; 257(3):520–526.



Case Definition and Incidence Rules *(continued)*

Incidence rules:

For individuals who meet the case definition:

- For abdominal hernia and abdominal wall hernia surgical repair the incidence date is considered the date of the first hospitalization or outpatient medical encounter that includes the defining diagnosis.
- An individual may be considered an incident case only *once per surveillance period*.

Exclusions:

- Individuals with a case defining medical encounter prior to the surveillance period.

Codes

The following ICD9 and ICD10 codes are included in the case definition:

Condition	ICD-10-CM Codes	ICD-9-CM Codes
Inguinal hernia	<i>K40 (inguinal hernia)</i>	<i>550 (inguinal hernia)</i>
	<i>K40.0 (bilateral inguinal hernia, with obstruction, without gangrene)</i>	- 550.12 (inguinal hernia, with obstruction, without mention of gangrene, bilateral, not specified as recurrent)
	- K40.00 (bilateral inguinal hernia, with obstruction, without gangrene, not specified as recurrent)	- 550.13 (inguinal hernia, with obstruction, without mention of gangrene bilateral, recurrent)
	- K40.01 (bilateral inguinal hernia, with obstruction, without gangrene, recurrent)	
	<i>K40.1 (bilateral inguinal hernia, with gangrene)</i>	- 550.02 (inguinal hernia, with gangrene, bilateral, not specified as recurrent)
	- K40.10 (bilateral inguinal hernia, with gangrene, not specified as recurrent)	- 550.03 (inguinal hernia, with gangrene, bilateral, recurrent)
	- K40.11 (bilateral inguinal hernia, with gangrene, recurrent)	
	<i>K40.2 (bilateral inguinal hernia, without obstruction or gangrene)</i>	- 550.92 (inguinal hernia, without mention of obstruction, bilateral, not specified as recurrent)
	- K40.20 (bilateral inguinal hernia, without obstruction or gangrene, not specified as recurrent)	- 550.93 (inguinal hernia, without mention of obstruction bilateral, recurrent)
	- K40.21 (bilateral inguinal hernia, without obstruction or gangrene, recurrent)	



	<p><i>K40.3 (unilateral inguinal hernia, with obstruction, without gangrene)</i></p> <ul style="list-style-type: none"> - K40.30 (unilateral inguinal hernia, with obstruction, without gangrene, not specified as recurrent) - K40.31 (unilateral inguinal hernia, with obstruction, without gangrene, recurrent) 	<ul style="list-style-type: none"> - 550.10 (inguinal hernia, with obstruction, without mention of gangrene, unilateral or unspecified, not specified as recurrent) - 550.11 (inguinal hernia, with obstruction, without mention of gangrene unilateral or unspecified, recurrent)
	<p><i>K40.4 (unilateral inguinal hernia, with gangrene)</i></p> <ul style="list-style-type: none"> - K40.40 (unilateral inguinal hernia, with gangrene, not specified as recurrent) - K40.41 (unilateral inguinal hernia, with gangrene, recurrent) 	<ul style="list-style-type: none"> - 550.00 (inguinal hernia, with gangrene, unilateral or unspecified, not specified as recurrent) - 550.01 (inguinal hernia, with gangrene, unilateral or unspecified, recurrent)
	<p><i>K40.9 (unilateral inguinal hernia, without obstruction or gangrene)</i></p> <ul style="list-style-type: none"> - K40.90 (unilateral inguinal hernia, without obstruction or gangrene, not specified as recurrent) - K40.91 (unilateral inguinal hernia, without obstruction or gangrene, recurrent) 	<ul style="list-style-type: none"> - 550.90 (inguinal hernia, without mention of obstruction or gangrene, unilateral or unspecified, not specified as recurrent) - 550.91 (inguinal hernia, without mention of obstruction or gangrene, unilateral or unspecified, recurrent)
Femoral hernia	<p><i>K41 (femoral hernia)</i></p> <p><i>K41.0 (bilateral femoral hernia, with obstruction, without gangrene)</i></p> <ul style="list-style-type: none"> - K41.00 (bilateral femoral hernia, with obstruction, without gangrene, not specified as recurrent) - K41.01 (bilateral femoral hernia, with obstruction, without gangrene, recurrent) <p><i>K41.1 (bilateral femoral hernia, with gangrene)</i></p> <ul style="list-style-type: none"> - K41.10 (bilateral femoral hernia, with gangrene, not specified as recurrent) - K41.11 (bilateral femoral hernia, with gangrene, recurrent) <p><i>K41.2 (bilateral femoral hernia, without obstruction or gangrene)</i></p> <ul style="list-style-type: none"> - K41.20 (bilateral femoral hernia, without obstruction or gangrene, not specified as recurrent) - K41.21 (bilateral femoral hernia, without obstruction or gangrene, recurrent) 	<p><i>551.0 (femoral hernia)</i></p> <ul style="list-style-type: none"> - 552.02 (femoral hernia with obstruction, bilateral, not specified as recurrent) - 552.03 (femoral hernia with obstruction bilateral, recurrent) - 551.02 (femoral hernia with gangrene, bilateral, not specified as recurrent) - 551.03 (femoral hernia with gangrene bilateral, recurrent) - 553.02 (femoral hernia without mention of obstruction or gangrene, bilateral, not specified as recurrent) - 553.03 (femoral hernia without mention of obstruction or gangrene bilateral, recurrent)

	<i>K41.3 (unilateral femoral hernia, with obstruction, without gangrene)</i>	- 552.00 (femoral hernia with obstruction, unilateral or unspecified, not specified as recurrent)
	- K41.30 (unilateral femoral hernia, with obstruction, without gangrene, not specified as recurrent)	- 552.01 (femoral hernia with obstruction unilateral or unspecified, recurrent)
	- K41.31 (unilateral femoral hernia, with obstruction, without gangrene, recurrent)	
	<i>K41.4 (unilateral femoral hernia, with gangrene)</i>	- 551.00 (femoral hernia with gangrene, unilateral or unspecified, not specified as recurrent)
	- K41.40 (unilateral femoral hernia, with gangrene, not specified as recurrent)	- 551.01 (femoral hernia with gangrene, or unspecified, recurrent)
	- K41.41 (unilateral femoral hernia, with gangrene, recurrent)	
	<i>K41.9 (unilateral femoral hernia, without obstruction or gangrene)</i>	- 553.00 (femoral hernia without mention of obstruction or gangrene, unilateral or unspecified, not specified as recurrent)
	- K41.90 (unilateral femoral hernia, without obstruction or gangrene, not specified as recurrent)	- 553.01 (femoral hernia without mention of obstruction or gangrene, unilateral or unspecified, recurrent)
	- K41.91 (unilateral femoral hernia, without obstruction or gangrene, recurrent)	
Umbilical hernia	<i>K42 (umbilical hernia)</i>	- 552.1 (umbilical hernia with obstruction)
	- K42.0 (umbilical hernia with obstruction, without gangrene)	- 551.1 (umbilical hernia with gangrene)
	- K42.1 (umbilical hernia with gangrene)	- 553.1 (umbilical hernia without mention of obstruction or gangrene)
	- K42.9 (umbilical hernia without obstruction or gangrene)	
Ventral hernia	<i>K43 (ventral hernia)</i>	
	- K43.0 (incisional hernia with obstruction, without gangrene)	- 552.21 (incisional ventral hernia with obstruction)
	- K43.1 (incisional hernia with gangrene)	- 551.21 (incisional ventral hernia I, with gangrene)
	- K43.2 (incisional hernia without obstruction or gangrene)	- 553.21 (incisional hernia without mention of obstruction or gangrene)
	- K43.3 (parastomal hernia with obstruction, without gangrene)	- 552.29 (other ventral hernia with obstruction)
	- K43.4 (parastomal hernia with gangrene)	- 551.29 (below)
	- K43.5 (parastomal hernia without obstruction or gangrene)	- 553.29 (below)

	<ul style="list-style-type: none"> - K43.6 (other and unspecified ventral hernia with obstruction, without gangrene) 	<ul style="list-style-type: none"> - 552.20 (ventral, unspecified, hernia, with obstruction)
	<ul style="list-style-type: none"> - K43.7 (other and unspecified hernia with gangrene) 	<ul style="list-style-type: none"> - 551.20 (ventral hernia, unspecified, with gangrene) - 551.29 (other ventral hernia with gangrene)
	<ul style="list-style-type: none"> - K43.9 (ventral hernia without obstruction or gangrene) 	<ul style="list-style-type: none"> - 553.20 (ventral, unspecified, hernia without mention of obstruction or gangrene) - 553.29 (other ventral hernia without mention of obstruction or gangrene)
Other types of hernias	<i>K45 (other abdominal hernia)</i>	552.8 (hernia of other specified site, with obstruction)
	<ul style="list-style-type: none"> - K45.0 (other specified abdominal hernia with obstruction, without gangrene) 	551.8 (hernia of other specified sites, with gangrene)
	<ul style="list-style-type: none"> - K45.1 (other specified abdominal hernia with gangrene) 	553.8 (hernia of other unspecified sites without mention of obstruction or gangrene)
	<ul style="list-style-type: none"> - K45.8 (other specified abdominal hernia without obstruction or gangrene) 	
	<i>K46 (unspecified abdominal hernia)</i>	552.9 (hernia of unspecified site, with obstruction)
	<ul style="list-style-type: none"> - K46.0 (unspecified abdominal hernia with obstruction, without gangrene) 	551.9 (hernia of unspecified site, with gangrene)
	<ul style="list-style-type: none"> - K46.1 (unspecified abdominal hernia with gangrene) 	553.9 (hernia of unspecified site without mention of obstruction or gangrene)
	<ul style="list-style-type: none"> - K46.9 (unspecified abdominal hernia without obstruction or gangrene) 	

Inpatient Procedure
ICD-10-CM (PR) Codes
ICD-9-CM (PR) Codes

Inguinal hernia repair	<i>0YU50 (supplement, inguinal region, right, open)</i>	<i>53.0 (other unilateral repair of inguinal hernia)</i>
	<ul style="list-style-type: none"> - 0YU507Z (supplement <i>right</i> inguinal region with <i>autologous</i> tissue substitute, open approach) 	<ul style="list-style-type: none"> - 53.03 (other and open repair of <i>direct</i> inguinal hernia with graft of prosthesis) - 53.04 (other and open repair of <i>indirect</i> inguinal hernia with graft of prosthesis) - 53.05 (repair of indirect inguinal hernia with graft of prosthesis, not otherwise specified)
	<ul style="list-style-type: none"> - 0YU50JZ (supplement <i>right</i> inguinal region with <i>synthetic</i> substitute, open approach) 	
	<ul style="list-style-type: none"> - 0YU50KZ (supplement <i>right</i> inguinal region with <i>nonautologous</i> tissue substitute, open approach) 	
	<i>0YU54 (supplement, inguinal region, right, percutaneous endoscopic)</i>	<i>17.1 (laparoscopic unilateral (repair of inguinal hernia)</i>



- 0YU547Z (supplement <i>right</i> inguinal region with <i>autologous</i> tissue substitute, percutaneous endoscopic approach)	- 17.11 (laparoscopic repair of <i>direct</i> inguinal hernia with graft or prosthesis)
- 0YU54JZ (supplement <i>right</i> inguinal region with <i>synthetic</i> substitute, percutaneous endoscopic approach)	- 17.12 (laparoscopic repair of <i>indirect</i> inguinal hernia with graft or prosthesis)
- 0YU54KZ (supplement <i>right</i> inguinal region with <i>nonautologous</i> tissue substitute, percutaneous endoscopic approach)	- 17.13 (laparoscopic repair of inguinal hernia with graft or prosthesis, not otherwise specified)
<i>0YU60 (supplement, inguinal region, left, open)</i>	53.03-05 (above)
- 0YU607Z (supplement <i>left</i> inguinal region with <i>autologous</i> tissue substitute, open approach)	
- 0YU60JZ (supplement <i>left</i> inguinal region with <i>synthetic</i> substitute, open approach)	
- 0YU60KZ (supplement <i>left</i> inguinal region with <i>nonautologous</i> tissue substitute, open approach)	
<i>0YU64 (supplement, inguinal region, left, percutaneous endoscopic)</i>	17.11-13 (above)
- 0YU647Z (supplement <i>left</i> inguinal region with <i>autologous</i> tissue substitute, percutaneous endoscopic approach)	
- 0YU64JZ (supplement <i>left</i> inguinal region with <i>synthetic</i> substitute, percutaneous endoscopic approach)	
- 0YU64KZ (supplement <i>left</i> inguinal region with <i>nonautologous</i> tissue substitute, percutaneous endoscopic approach)	
<i>0YQ5 (repair, inguinal region, right)</i>	<i>53.0 (other unilateral repair of inguinal hernia)</i>
- 0YQ50ZZ (repair <i>right</i> inguinal region, open approach)	- 53.00 (unilateral repair of inguinal hernia, not otherwise specified)
- 0YQ53ZZ (repair <i>right</i> inguinal region, percutaneous approach)	- 53.01 (other and open repair of <i>direct</i> inguinal hernia)
- 0YQ54ZZ (repair <i>right</i> inguinal region, percutaneous endoscopic approach)	- 53.02 (other and open repair of <i>indirect</i> inguinal hernia)
- 0YQ5XZ (repair <i>right</i> inguinal region, external approach)	
<i>0YQ6 (repair, inguinal region, left)</i>	
- 0YQ60ZZ (repair <i>left</i> inguinal region, open approach)	

	- 0YQ63ZZ (repair <i>left</i> inguinal region, percutaneous approach)	
	- 0YQ64ZZ (repair <i>left</i> inguinal region, percutaneous endoscopic approach)	
	- 0YQ6XZ (repair <i>left</i> inguinal region, external approach)	
	<i>0YQA (repair, inguinal region, bilateral)</i>	<i>53.1 (other bilateral repair of inguinal hernia)</i>
	- 0YQA0ZZ (repair <i>bilateral</i> inguinal region open approach)	- 53.10 (bilateral(of inguinal hernia, not otherwise specified)
	- 0YQA3ZZ (repair <i>bilateral</i> inguinal region, percutaneous approach)	- 53.11 (other and open bilateral repair of <i>direct</i> inguinal hernia)
	- 0YQA4ZZ (repair <i>bilateral</i> inguinal region, percutaneous endoscopic approach)	- 53.12 (other and open bilateral repair of <i>indirect</i> inguinal hernia) - 53.13 (other and open bilateral repair of inguinal hernia, one direct and one indirect)
	<i>0YUA0 (supplement, inguinal region, bilateral, open)</i>	- 53.14 (other and open bilateral repair of <i>direct</i> inguinal hernia with graft or prosthesis)
	- 0YUA07Z (supplement <i>bilateral</i> inguinal region with <i>autologous</i> tissue substitute, open approach)	- 53.15 (other and open bilateral repair of <i>indirect</i> inguinal hernia with graft or prosthesis)
	- 0YUA0JZ (supplement <i>bilateral</i> inguinal region with <i>synthetic</i> substitute, open approach)	- 53.16 (other and open bilateral repair of inguinal hernia, one <i>direct</i> and one <i>indirect</i> , with graft or prosthesis)
	- 0YUA0KZ (supplement <i>bilateral</i> inguinal region with <i>nonautologous</i> tissue substitute, open approach)	- 53.17 (bilateral inguinal hernia repair with graft or prosthesis, not otherwise specified)
	<i>0YUA4 (supplement, inguinal region, bilateral, percutaneous approach)</i>	<i>17.2 (laparoscopic bilateral repair of inguinal hernia)</i>
	- 0YUA47Z (supplement <i>bilateral</i> inguinal region with <i>autologous</i> tissue substitute, percutaneous endoscopic approach)	- 17.21 (laparoscopic bilateral repair of <i>direct</i> inguinal hernia with graft of prosthesis)
	- 0YUA4JZ (supplement <i>bilateral</i> inguinal region with <i>synthetic</i> substitute, percutaneous endoscopic approach)	- 17.22 (laparoscopic bilateral repair of <i>indirect</i> inguinal hernia with graft of prosthesis)
	- 0YUA4KZ (supplement <i>bilateral</i> inguinal region with <i>nonautologous</i> tissue substitute, percutaneous endoscopic approach)	- 17.23 (laparoscopic bilateral repair of inguinal hernia, one <i>direct</i> and one <i>indirect</i> , with graft of prosthesis) - 17.24 (laparoscopic bilateral repair of inguinal hernia with graft of prosthesis, not otherwise specified)
Femoral hernia repair	<i>0YQ7 (repair, femoral region, right)</i>	- 53.29 (other unilateral femoral herniorrhaphy)
	- 0YQ70ZZ (repair <i>right</i> femoral region, open approach)	

- 0YQ73ZZ (repair <i>right</i> femoral region, percutaneous approach)	
- 0YQ74ZZ (repair <i>right</i> femoral region, percutaneous endoscopic approach)	
- 0YQ7XZ (repair <i>right</i> femoral region, external approach)	
<i>0YQ8 (repair, femoral region, left)</i>	
- 0YQ80ZZ (repair <i>left</i> femoral region, open approach)	
- 0YQ83ZZ (repair <i>left</i> femoral region, percutaneous approach)	
- 0YQ84ZZ (repair <i>left</i> femoral region, percutaneous endoscopic approach)	
- 0YQ8XZ (repair <i>left</i> femoral region, external approach)	
<i>0YQE (repair, femoral region, bilateral)</i>	- 53.39 (other bilateral femoral herniorrhaphy)
- 0YQE0ZZ (repair <i>bilateral</i> femoral region open approach)	
- 0YQE3ZZ (repair <i>bilateral</i> femoral region, percutaneous approach)	
- 0YQE4ZZ (repair <i>bilateral</i> femoral region, percutaneous endoscopic approach)	
<i>0YU70 (supplement, femoral region, right, open)</i>	<i>53.2 (unilateral repair of femoral hernia)</i>
- 0YU707Z (supplement <i>right</i> femoral region with <i>autologous</i> tissue substitute, open approach)	- 53.21 (unilateral repair of femoral hernia with graft or prosthesis)
- 0YU70JZ (supplement <i>right</i> femoral region with <i>synthetic</i> substitute, open approach)	
- 0YU70KZ (supplement <i>right</i> femoral region with <i>nonautologous</i> tissue substitute, open approach)	
<i>0YU74 (supplement, femoral region, right, percutaneous endoscopic)</i>	
- 0YU747Z (supplement <i>right</i> femoral region with <i>autologous</i> tissue substitute, percutaneous endoscopic approach)	
- 0YU74JZ (supplement <i>right</i> femoral region with <i>synthetic</i> substitute, percutaneous endoscopic approach)	

	<ul style="list-style-type: none"> - 0YU74KZ (supplement <i>right</i> femoral region with <i>nonautologous</i> tissue substitute, percutaneous endoscopic approach) 	
	<i>0YUE0 (supplement, femoral region, bilateral, open)</i>	<i>53.3 (bilateral repair of femoral hernia)</i>
	<ul style="list-style-type: none"> - 0YUE07Z (supplement <i>bilateral</i> femoral region with <i>autologous</i> tissue substitute, open approach) 	<ul style="list-style-type: none"> - 53.31 (bilateral repair of femoral hernia with graft or prosthesis)
	<ul style="list-style-type: none"> - 0YUE0JZ (supplement <i>bilateral</i> femoral region with <i>synthetic</i> substitute, open approach) 	
	<ul style="list-style-type: none"> - 0YUE0KZ (supplement <i>bilateral</i> femoral region with <i>nonautologous</i> tissue substitute, open approach) 	
	<i>0YUE4 (supplement, femoral region, bilateral, percutaneous endoscopic)</i>	
	<ul style="list-style-type: none"> - 0YUE47Z (supplement <i>bilateral</i> femoral region with <i>autologous</i> tissue substitute, percutaneous endoscopic approach) 	
	<ul style="list-style-type: none"> - 0YUE4JZ (supplement <i>bilateral</i> femoral region with <i>synthetic</i> substitute, percutaneous endoscopic approach) 	
	<ul style="list-style-type: none"> - 0YUE4KZ (supplement <i>bilateral</i> femoral region with <i>nonautologous</i> tissue substitute, percutaneous endoscopic approach) 	
Abdominal wall hernia repair <i>(Includes umbilical and incisional hernia repair)</i>	<i>0WQF (repair, abdominal wall)</i>	<i>53.4 (repair of umbilical hernia)</i> <i>53.5 (repair of other hernia of anterior abdominal wall; without graft or prosthesis)</i>
	<ul style="list-style-type: none"> - 0WQF0ZZ (repair abdominal wall, open approach) 	<ul style="list-style-type: none"> - 53.49 (other open umbilical herniorrhaphy)
	<ul style="list-style-type: none"> - 0WQF3ZZ (repair abdominal wall, percutaneous approach) 	<ul style="list-style-type: none"> - 53.43 (other laparoscopic umbilical herniorrhaphy)
	<ul style="list-style-type: none"> - 0WQF4ZZ (repair abdominal wall, percutaneous endoscopic approach) 	<ul style="list-style-type: none"> - 53.51 (incisional hernia repair) - 53.59 (repair of other hernia of anterior abdominal wall)
	<ul style="list-style-type: none"> - 0WQFX72 (repair abdominal wall, stoma, external approach) 	<ul style="list-style-type: none"> - 46.40 (revision of intestinal stoma, not otherwise specified) - 46.41 (revision of stoma of small intestine) - 46.42 (repair of pericostomy hernia) - 46.43 (other revision of stoma large intestine)

	- 0WQFXZZ (repair abdominal wall, external approach)	<i>Translated code too broad for inclusion</i>
	<i>0WUF0 (supplement, abdominal wall, open)</i>	<i>53.6 (repair of other hernia of anterior abdominal wall with graft or prosthesis)</i>
	0WUF07Z (supplement <i>abdominal wall</i> with <i>autologous</i> tissue substitute, open approach)	- 53.41 (other and open repair of umbilical hernia with graft or prosthesis)
	- 0WUF0JZ (supplement <i>abdominal wall</i> with <i>synthetic</i> substitute, open approach)	- 53.61 (other open incisional hernia repair with graft or prosthesis)
	- 0WUF0KZ (supplement <i>abdominal wall</i> with <i>nonautologous</i> tissue substitute, open approach)	
	<i>0WUF4 (supplement, abdominal wall, percutaneous endoscopic approach)</i>	- 53.42 (laparoscopic repair of umbilical hernia with graft or prosthesis)
	- 0WUF47Z (supplement <i>abdominal wall</i> with <i>autologous</i> tissue substitute, percutaneous endoscopic approach)	- 53.62 (laparoscopic incisional hernia(repair with graft of prosthesis)
	- 0WUF4JZ (supplement <i>abdominal wall</i> with <i>synthetic</i> substitute, percutaneous endoscopic approach)	- 53.63 (other laparoscopic repair of other hernia of anterior abdominal wall with graft of prosthesis)
	- 0WUF4KZ (supplement <i>abdominal wall</i> with <i>nonautologous</i> tissue substitute, percutaneous endoscopic approach)	- 53.69 (other and open repair of other hernia of anterior abdominal wall with graft of prosthesis)
Other types hernia repair	<i>Translated code too broad for inclusion</i>	53.9 (other hernia repair)

Outpatient Procedures

CPT Codes

Inguinal hernia repair	49505 (repair initial inguinal hernia, age 5 years or older; reducible)
	49507 (repair initial inguinal hernia, age 5 years or older; incarcerated or strangulated)
	49520 (repair recurrent inguinal hernia, any age; reducible)
	49521 (repair recurrent inguinal hernia, any age; incarcerated or strangulated)
	49525 (repair inguinal hernia, sliding, any age)
	49650 (laparoscopy, surgical;(repair initial inguinal hernia)
	49651 (laparoscopy, surgical;(repair recurrent inguinal hernia)
Femoral hernia repair	49550 (repair initial femoral hernia, any age; reducible)
	49553 (repair initial femoral hernia, any age; incarcerated or strangulated)
	49555 (repair recurrent femoral hernia; reducible)
	49557 (repair recurrent femoral hernia; incarcerated or strangulated)



Umbilical hernia repair	49585 (repair umbilical hernia, age 5 years or older; reducible)
	48587 (repair umbilical hernia, age 5 years or older; incarcerated or strangulated)
Ventral/incisional hernia repair	49560 (repair initial incisional or ventral hernia; reducible)
	49561 (repair initial incisional or ventral hernia; incarcerated or strangulated)
	49565 (repair recurrent incisional or ventral hernia; reducible)
	49566 (repair recurrent incisional or ventral hernia; incarcerated or strangulated)
	49568 (implantation of mesh or other prosthesis for open incisional or ventral hernia(repair or mesh for closure of debridement for necrotizing soft tissue infection (List separately in addition to code for the incisional or ventral hernia repair)
	49570 (repair epigastric hernia (e.g., preperitoneal fat); reducible, separate procedure)
	49572 (repair epigastric hernia (e.g., preperitoneal fat); incarcerated or strangulated).
	49590 (repair spigelian hernia)
	49652 (laparoscopy, surgical repair, ventral, umbilical, spigelian or epigastric hernia (includes mesh insertion, when performed); reducible)
	49653 (laparoscopy, surgical repair, ventral, umbilical, spigelian or epigastric hernia (includes mesh insertion, when performed); incarcerated or strangulated)
	49654 (laparoscopy, surgical repair, incisional hernia (includes mesh insertion, when performed); reducible)
	49655 (laparoscopy, surgical repair, incisional hernia (includes mesh insertion, when performed); incarcerated or strangulated)
	49656 (laparoscopy, surgical repair, recurrent incisional hernia (includes mesh insertion, when performed); reducible)
	46657 (laparoscopy, surgical repair, recurrent incisional hernia (includes mesh insertion, when performed); incarcerated or strangulated)
Other types hernia repair	49540 (repair lumbar hernia)
	49659 (unlisted laparoscopy procedure, hernioplasty, herniorrhaphy, herniotomy)

Development and Revisions

- In October of 2016 the case definition was updated to include ICD10 codes.
- This case definition was developed in August of 2016 by staff from the Epidemiology and Analysis (E&A) division and the *Medical Surveillance Monthly Report (MSMR)* for use in a *MSMR* article on abdominal hernias.¹ The case definition was developed based on reviews of the ICD9 codes, the scientific literature, and previous AFHSC analyses.

Case Definition and Incidence Rule Rationale

- None



Code Set Determination and Rationale

- ICD9 code 96.27 (manual reduction of hernia) is not included in the code set as the procedure is considered a temporary measure to reduce symptoms and not a definitive surgical repair. The corresponding ICD10 codes are included as they are defined by the words “repair, external approach” suggesting definitive treatment.
- The following codes were not included in the 2016 MSMR article.¹ They are included in the code set above because, when these codes are recorded in the record of a patient who has also been diagnosed as an incident case of a hernia, the codes likely indicate an abdominal wall hernia repair.
 - 46.40 (revision of intestinal stoma, not otherwise specified)
 - 46.41 (revision of stoma of small intestine)
 - 46.42 (repair of pericostomy hernia)
 - 46.43 (other revision of stoma large intestine)

Reports

AFHSB reports on hiatal hernia in the following reports:

- None

Review

Oct 2016	Case definition reviewed and adopted by the AFHSB Surveillance Methods and Standards (SMS) working group.
Aug 2016	Case definition developed by AFHSB E&A and <i>MSMR</i> staff.

Comments

- None

