



Inpatient Quality Indicator 11 (IQI 11) Abdominal Aortic Aneurysm (AAA) Repair Mortality Rate

July 2021

Hospital-Level Indicator

Type of Score: Rate

Prepared by:

Agency for Healthcare Research and Quality

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www.qualityindicators.ahrq.gov

DESCRIPTION

In-hospital deaths per 1,000 discharges with abdominal aortic aneurysm (AAA) repair, ages 18 years and older. Includes metrics for discharges grouped based on AAA rupture status and repair type. Excludes transfers to another hospital, and obstetric discharges.

[NOTE: The software provides the rate per hospital discharge. However, common practice reports the measure as per 1,000 discharges. The user must multiply the rate obtained from the software by 1,000 to report in-hospital deaths per 1,000 hospital discharges.]

Stratification of Indicator

The indicator is stratified into four groups by 1) type of AAA repair (open vs. endovascular) and 2) AAA rupture status.

Strata are mutually exclusive. If both endoscopic and open approach procedures are conducted, patients are assigned to the stratum with the highest risk of mortality (Stratum Open/Ruptured, Endo/Ruptured, Open/Intact, Endo/Intact).

Strata hierarchy (listed from highest mortality to lowest mortality):

1. Stratum Open/Ruptured (Open repair of ruptured AAA)
2. Stratum Endo/Ruptured (Endovascular repair of ruptured AAA)
3. Stratum Open/Intact (Open repair of unruptured AAA)
4. Stratum Endo/Intact (Endovascular repair of unruptured AAA)

NUMERATOR OVERALL

Number of deaths (DISP=20) among cases meeting the inclusion and exclusion rules for the denominator.

STRATUM Open/Ruptured: (Open repair of ruptured AAA)

Number of deaths (DISP=20) among cases meeting the inclusion and exclusion rules for the denominator.

STRATUM Endo/Ruptured: (Endovascular repair of ruptured AAA)

Number of deaths (DISP=20) among cases meeting the inclusion and exclusion rules for the denominator.

STRATUM Open/Intact: (Open repair of unruptured AAA)

Number of deaths (DISP=20) among cases meeting the inclusion and exclusion rules for the denominator.

STRATUM Endo/Intact: (Endovascular repair of unruptured AAA)

Number of deaths (DISP=20) among cases meeting the inclusion and exclusion rules for the denominator.

DENOMINATOR OVERALL

Discharges, for patients ages 18 years and older, with any of the following:

- any listed ICD-10-CM diagnosis code for ruptured AAA (**PRAAARD***) and any listed ICD-10-PCS procedure code for open AAA repair (**PRAAARP***); or
- any listed ICD-10-CM diagnosis code for ruptured AAA (**PRAAARD***) and any listed ICD-10-PCS procedure codes for endovascular AAA repair (**PRAAA2P***); or
- any listed ICD-10-CM diagnosis code for unruptured AAA (**PRAAA2D***) and any listed ICD-10-PCS procedure codes for open AAA repair (**PRAAARP***); or
- any listed ICD-10-CM diagnosis code for unruptured AAA (**PRAAA2D***) and any listed ICD-10-PCS procedure codes for endovascular AAA repair (**PRAAA2P***)

DENOMINATOR STRATA

NOTE: The indicator is stratified into four groups by 1) type of AAA repair (open vs. endovascular) and 2) AAA rupture status

STRATUM Open/Ruptured: (Open repair of ruptured AAA)

Discharges otherwise qualifying for the denominator, with any listed ICD-10-CM diagnosis code for ruptured AAA (**PRAAARD***) and any listed ICD-10-PCS procedure code for open AAA repair (**PRAAARP***).

STRATUM Endo/Ruptured: (Endovascular repair of ruptured AAA)

Discharges otherwise qualifying for the denominator, with any listed ICD-10-CM diagnosis code for ruptured AAA (**PRAAARD***) and any listed ICD-10-PCS procedure code for endovascular AAA repair (**PRAAA2P***).

STRATUM Open/Intact: (Open repair of unruptured AAA)

Discharges otherwise qualifying for the denominator, with any listed ICD-10-CM diagnosis code for unruptured AAA (**PRAAA2D***) and any listed ICD-10-PCS procedure code for open AAA repair (**PRAAARP***).

STRATUM Endo/Intact: (Endovascular repair of unruptured AAA)

Discharges otherwise qualifying for the denominator, with any listed ICD-10-CM diagnosis code for unruptured AAA (**PRAAA2D***) and any listed ICD-10-PCS procedure code for endovascular AAA repair (**PRAAA2P***).

DENOMINATOR EXCLUSIONS

Exclude cases:

- transferring to another short-term hospital (DISP=2)
- MDC 14 (pregnancy, childbirth, and puerperium)
- MDC 15 (newborns and other neonates with conditions originating in perinatal period)
- with an ungroupable DRG (DRG=999)
- with missing discharge disposition (DISP=missing), gender (SEX=missing), age (AGE=missing), quarter (DQTR=missing), year (YEAR=missing) or principal diagnosis (DX1=missing)

* See below for code list

Ruptured abdominal aortic aneurysm (AAA) diagnosis codes: (PRAAARD)

I713 Abdominal aortic aneurysm, ruptured

Open abdominal aortic aneurysm repair (AAA) procedure codes: (PRAAARP)

0410090	Bypass abdominal aorta to abdominal aorta with autologous venous tissue, open approach	04100K8	Bypass abdominal aorta to bilateral common iliac arteries with nonautologous tissue substitute, open approach
0410096	Bypass abdominal aorta to right common iliac artery with autologous venous tissue, open approach	04100K9	Bypass abdominal aorta to right internal iliac artery with nonautologous tissue substitute, open approach
0410097	Bypass abdominal aorta to left common iliac artery with autologous venous tissue, open approach	04100KB	Bypass abdominal aorta to left internal iliac artery with nonautologous tissue substitute, open approach
0410098	Bypass abdominal aorta to bilateral common iliac arteries with autologous venous tissue, open approach	04100KC	Bypass abdominal aorta to bilateral internal iliac arteries with nonautologous tissue substitute, open approach
0410099	Bypass abdominal aorta to right internal iliac artery with autologous venous tissue, open approach	04100KD	Bypass abdominal aorta to right external iliac artery with nonautologous tissue substitute, open approach
041009B	Bypass abdominal aorta to left internal iliac artery with autologous venous tissue, open approach	04100KF	Bypass abdominal aorta to left external iliac artery with nonautologous tissue substitute, open approach
041009C	Bypass abdominal aorta to bilateral internal iliac arteries with autologous venous tissue, open approach	04100KG	Bypass abdominal aorta to bilateral external iliac arteries with nonautologous tissue substitute, open approach
041009D	Bypass abdominal aorta to right external iliac artery with autologous venous tissue, open approach	04100KH	Bypass abdominal aorta to right femoral artery with nonautologous tissue substitute, open approach
041009F	Bypass abdominal aorta to left external iliac artery with autologous venous tissue, open approach	04100KJ	Bypass abdominal aorta to left femoral artery with nonautologous tissue substitute, open approach
041009G	Bypass abdominal aorta to bilateral external iliac arteries with autologous venous tissue, open approach	04100KK	Bypass abdominal aorta to bilateral femoral arteries with nonautologous tissue substitute, open approach
041009H	Bypass abdominal aorta to right femoral artery with autologous venous tissue, open approach	04100KQ	Bypass abdominal aorta to lower extremity artery with nonautologous tissue substitute, open approach

041009J	Bypass abdominal aorta to left femoral artery with autologous venous tissue, open approach	04100KR	Bypass abdominal aorta to lower artery with nonautologous tissue substitute, open approach
041009K	Bypass abdominal aorta to bilateral femoral arteries with autologous venous tissue, open approach	04100Z0	Bypass abdominal aorta to abdominal aorta, open approach
041009Q	Bypass abdominal aorta to lower extremity artery with autologous venous tissue, open approach	04100Z6	Bypass abdominal aorta to right common iliac artery, open approach
041009R	Bypass abdominal aorta to lower artery with autologous venous tissue, open approach	04100Z7	Bypass abdominal aorta to left common iliac artery, open approach
04100A0	Bypass abdominal aorta to abdominal aorta with autologous arterial tissue, open approach	04100Z8	Bypass abdominal aorta to bilateral common iliac arteries, open approach
04100A6	Bypass abdominal aorta to right common iliac artery with autologous arterial tissue, open approach	04100Z9	Bypass abdominal aorta to right internal iliac artery, open approach
04100A7	Bypass abdominal aorta to left common iliac artery with autologous arterial tissue, open approach	04100ZB	Bypass abdominal aorta to left internal iliac artery, open approach
04100A8	Bypass abdominal aorta to bilateral common iliac arteries with autologous arterial tissue, open approach	04100ZC	Bypass abdominal aorta to bilateral internal iliac arteries, open approach
04100A9	Bypass abdominal aorta to right internal iliac artery with autologous arterial tissue, open approach	04100ZD	Bypass abdominal aorta to right external iliac artery, open approach
04100AB	Bypass abdominal aorta to left internal iliac artery with autologous arterial tissue, open approach	04100ZF	Bypass abdominal aorta to left external iliac artery, open approach
04100AC	Bypass abdominal aorta to bilateral internal iliac arteries with autologous arterial tissue, open approach	04100ZG	Bypass abdominal aorta to bilateral external iliac arteries, open approach
04100AD	Bypass abdominal aorta to right external iliac artery with autologous arterial tissue, open approach	04100ZH	Bypass abdominal aorta to right femoral artery, open approach
04100AF	Bypass abdominal aorta to left external iliac artery with autologous arterial tissue, open approach	04100ZJ	Bypass abdominal aorta to left femoral artery, open approach
04100AG	Bypass abdominal aorta to bilateral external iliac arteries with autologous arterial tissue, open approach	04100ZK	Bypass abdominal aorta to bilateral femoral arteries, open approach

04100AH	Bypass abdominal aorta to right femoral artery with autologous arterial tissue, open approach	04100ZQ	Bypass abdominal aorta to lower extremity artery, open approach
04100AJ	Bypass abdominal aorta to left femoral artery with autologous arterial tissue, open approach	04100ZR	Bypass abdominal aorta to lower artery, open approach
04100AK	Bypass abdominal aorta to bilateral femoral arteries with autologous arterial tissue, open approach	04500ZZ	Destruction of abdominal aorta, open approach
04100AQ	Bypass abdominal aorta to lower extremity artery with autologous arterial tissue, open approach	04B00ZZ	Excision of abdominal aorta, open approach
04100AR	Bypass abdominal aorta to lower artery with autologous arterial tissue, open approach	04H00DZ	Insertion of intraluminal device into abdominal aorta, open approach
04100J0	Bypass abdominal aorta to abdominal aorta with synthetic substitute, open approach	04L00DZ	Occlusion of abdominal aorta with intraluminal device, open approach
04100J6	Bypass abdominal aorta to right common iliac artery with synthetic substitute, open approach	04L00ZZ	Occlusion of abdominal aorta, open approach
04100J7	Bypass abdominal aorta to left common iliac artery with synthetic substitute, open approach	04Q00ZZ	Repair abdominal aorta, open approach
04100J8	Bypass abdominal aorta to bilateral common iliac arteries with synthetic substitute, open approach	04R007Z	Replacement of abdominal aorta with autologous tissue substitute, open approach
04100J9	Bypass abdominal aorta to right internal iliac artery with synthetic substitute, open approach	04R00JZ	Replacement of abdominal aorta with synthetic substitute, open approach
04100JB	Bypass abdominal aorta to left internal iliac artery with synthetic substitute, open approach	04R00KZ	Replacement of abdominal aorta with nonautologous tissue substitute, open approach
04100JC	Bypass abdominal aorta to bilateral internal iliac arteries with synthetic substitute, open approach	04U007Z	Supplement abdominal aorta with autologous tissue substitute, open approach
04100JD	Bypass abdominal aorta to right external iliac artery with synthetic substitute, open approach	04U00JZ	Supplement abdominal aorta with synthetic substitute, open approach
04100JF	Bypass abdominal aorta to left external iliac artery with synthetic substitute, open approach	04U00KZ	Supplement abdominal aorta with nonautologous tissue substitute, open approach

04100JG	Bypass abdominal aorta to bilateral external iliac arteries with synthetic substitute, open approach	04V00D6	Restriction of abdominal aorta, bifurcation, with intraluminal device, open approach
04100JH	Bypass abdominal aorta to right femoral artery with synthetic substitute, open approach	04V00DJ	Restriction of abdominal aorta with intraluminal device, temporary, open approach
04100JJ	Bypass abdominal aorta to left femoral artery with synthetic substitute, open approach	04V00DZ	Restriction of abdominal aorta with intraluminal device, open approach
04100JK	Bypass abdominal aorta to bilateral femoral arteries with synthetic substitute, open approach	04V00E6	Restriction of abdominal aorta, bifurcation, with branched or fenestrated intraluminal device, one or two arteries, open approach
04100JQ	Bypass abdominal aorta to lower extremity artery with synthetic substitute, open approach	04V00EZ	Restriction of abdominal aorta with branched or fenestrated intraluminal device, one or two arteries, open approach
04100JR	Bypass abdominal aorta to lower artery with synthetic substitute, open approach	04V00F6	Restriction of abdominal aorta, bifurcation, with branched or fenestrated intraluminal device, three or more arteries, open approach
04100K0	Bypass abdominal aorta to abdominal aorta with nonautologous tissue substitute, open approach	04V00FZ	Restriction of abdominal aorta with branched or fenestrated intraluminal device, three or more arteries, open approach
04100K6	Bypass abdominal aorta to right common iliac artery with nonautologous tissue substitute, open approach	04V00Z6	Restriction of abdominal aorta, bifurcation, open approach
04100K7	Bypass abdominal aorta to left common iliac artery with nonautologous tissue substitute, open approach	04V00ZZ	Restriction of abdominal aorta, open approach

Unruptured abdominal aortic aneurysm (AAA) diagnosis codes: (PRAAA2D)

I714 Abdominal aortic aneurysm, without
 rupture

Endovascular abdominal aortic aneurysm repair (AAA) procedure codes: (PRAAA2P)

0410490	Bypass abdominal aorta to abdominal aorta with autologous venous tissue, percutaneous endoscopic approach	04104KQ	Bypass abdominal aorta to lower extremity artery with nonautologous tissue substitute, percutaneous endoscopic approach
0410496	Bypass abdominal aorta to right common iliac artery with autologous venous tissue, percutaneous endoscopic approach	04104KR	Bypass abdominal aorta to lower artery with nonautologous tissue substitute, percutaneous endoscopic approach
0410497	Bypass abdominal aorta to left common iliac artery with autologous venous tissue, percutaneous endoscopic approach	04104Z0	Bypass abdominal aorta to abdominal aorta, percutaneous endoscopic approach
0410498	Bypass abdominal aorta to bilateral common iliac arteries with autologous venous tissue, percutaneous endoscopic approach	04104Z6	Bypass abdominal aorta to right common iliac artery, percutaneous endoscopic approach
0410499	Bypass abdominal aorta to right internal iliac artery with autologous venous tissue, percutaneous endoscopic approach	04104Z7	Bypass abdominal aorta to left common iliac artery, percutaneous endoscopic approach
041049B	Bypass abdominal aorta to left internal iliac artery with autologous venous tissue, percutaneous endoscopic approach	04104Z8	Bypass abdominal aorta to bilateral common iliac arteries, percutaneous endoscopic approach
041049C	Bypass abdominal aorta to bilateral internal iliac arteries with autologous venous tissue, percutaneous endoscopic approach	04104Z9	Bypass abdominal aorta to right internal iliac artery, percutaneous endoscopic approach
041049D	Bypass abdominal aorta to right external iliac artery with autologous venous tissue, percutaneous endoscopic approach	04104ZB	Bypass abdominal aorta to left internal iliac artery, percutaneous endoscopic approach
041049F	Bypass abdominal aorta to left external iliac artery with autologous venous tissue, percutaneous endoscopic approach	04104ZC	Bypass abdominal aorta to bilateral internal iliac arteries, percutaneous endoscopic approach
041049G	Bypass abdominal aorta to bilateral external iliac arteries with autologous venous tissue, percutaneous endoscopic approach	04104ZD	Bypass abdominal aorta to right external iliac artery, percutaneous endoscopic approach

041049H	Bypass abdominal aorta to right femoral artery with autologous venous tissue, percutaneous endoscopic approach	04104ZF	Bypass abdominal aorta to left external iliac artery, percutaneous endoscopic approach
041049J	Bypass abdominal aorta to left femoral artery with autologous venous tissue, percutaneous endoscopic approach	04104ZG	Bypass abdominal aorta to bilateral external iliac arteries, percutaneous endoscopic approach
041049K	Bypass abdominal aorta to bilateral femoral arteries with autologous venous tissue, percutaneous endoscopic approach	04104ZH	Bypass abdominal aorta to right femoral artery, percutaneous endoscopic approach
041049Q	Bypass abdominal aorta to lower extremity artery with autologous venous tissue, percutaneous endoscopic approach	04104ZJ	Bypass abdominal aorta to left femoral artery, percutaneous endoscopic approach
041049R	Bypass abdominal aorta to lower artery with autologous venous tissue, percutaneous endoscopic approach	04104ZK	Bypass abdominal aorta to bilateral femoral arteries, percutaneous endoscopic approach
04104A0	Bypass abdominal aorta to abdominal aorta with autologous arterial tissue, percutaneous endoscopic approach	04104ZQ	Bypass abdominal aorta to lower extremity artery, percutaneous endoscopic approach
04104A6	Bypass abdominal aorta to right common iliac artery with autologous arterial tissue, percutaneous endoscopic approach	04104ZR	Bypass abdominal aorta to lower artery, percutaneous endoscopic approach
04104A7	Bypass abdominal aorta to left common iliac artery with autologous arterial tissue, percutaneous endoscopic approach	04503ZZ	Destruction of abdominal aorta, percutaneous approach
04104A8	Bypass abdominal aorta to bilateral common iliac arteries with autologous arterial tissue, percutaneous endoscopic approach	04504ZZ	Destruction of abdominal aorta, percutaneous endoscopic approach
04104A9	Bypass abdominal aorta to right internal iliac artery with autologous arterial tissue, percutaneous endoscopic approach	04B03ZZ	Excision of abdominal aorta, percutaneous approach
04104AB	Bypass abdominal aorta to left internal iliac artery with autologous arterial tissue, percutaneous endoscopic approach	04B04ZZ	Excision of abdominal aorta, percutaneous endoscopic approach

04104AC	Bypass abdominal aorta to bilateral internal iliac arteries with autologous arterial tissue, percutaneous endoscopic approach	04H03DZ	Insertion of intraluminal device into abdominal aorta, percutaneous approach
04104AD	Bypass abdominal aorta to right external iliac artery with autologous arterial tissue, percutaneous endoscopic approach	04H04DZ	Insertion of intraluminal device into abdominal aorta, percutaneous endoscopic approach
04104AF	Bypass abdominal aorta to left external iliac artery with autologous arterial tissue, percutaneous endoscopic approach	04L03DJ	Occlusion of abdominal aorta with intraluminal device, temporary, percutaneous approach
04104AG	Bypass abdominal aorta to bilateral external iliac arteries with autologous arterial tissue, percutaneous endoscopic approach	04L03DZ	Occlusion of abdominal aorta with intraluminal device, percutaneous approach
04104AH	Bypass abdominal aorta to right femoral artery with autologous arterial tissue, percutaneous endoscopic approach	04L03ZZ	Occlusion of abdominal aorta, percutaneous approach
04104AJ	Bypass abdominal aorta to left femoral artery with autologous arterial tissue, percutaneous endoscopic approach	04L04DZ	Occlusion of abdominal aorta with intraluminal device, percutaneous endoscopic approach
04104AK	Bypass abdominal aorta to bilateral femoral arteries with autologous arterial tissue, percutaneous endoscopic approach	04L04ZZ	Occlusion of abdominal aorta, percutaneous endoscopic approach
04104AQ	Bypass abdominal aorta to lower extremity artery with autologous arterial tissue, percutaneous endoscopic approach	04Q03ZZ	Repair abdominal aorta, percutaneous approach
04104AR	Bypass abdominal aorta to lower artery with autologous arterial tissue, percutaneous endoscopic approach	04Q04ZZ	Repair abdominal aorta, percutaneous endoscopic approach
04104J0	Bypass abdominal aorta to abdominal aorta with synthetic substitute, percutaneous endoscopic approach	04R047Z	Replacement of abdominal aorta with autologous tissue substitute, percutaneous endoscopic approach
04104J6	Bypass abdominal aorta to right common iliac artery with synthetic substitute, percutaneous endoscopic approach	04R04JZ	Replacement of abdominal aorta with synthetic substitute, percutaneous endoscopic approach

04104J7	Bypass abdominal aorta to left common iliac artery with synthetic substitute, percutaneous endoscopic approach	04R04KZ	Replacement of abdominal aorta with nonautologous tissue substitute, percutaneous endoscopic approach
04104J8	Bypass abdominal aorta to bilateral common iliac arteries with synthetic substitute, percutaneous endoscopic approach	04U037Z	Supplement abdominal aorta with autologous tissue substitute, percutaneous approach
04104J9	Bypass abdominal aorta to right internal iliac artery with synthetic substitute, percutaneous endoscopic approach	04U03JZ	Supplement abdominal aorta with synthetic substitute, percutaneous approach
04104JB	Bypass abdominal aorta to left internal iliac artery with synthetic substitute, percutaneous endoscopic approach	04U03KZ	Supplement abdominal aorta with nonautologous tissue substitute, percutaneous approach
04104JC	Bypass abdominal aorta to bilateral internal iliac arteries with synthetic substitute, percutaneous endoscopic approach	04U047Z	Supplement abdominal aorta with autologous tissue substitute, percutaneous endoscopic approach
04104JD	Bypass abdominal aorta to right external iliac artery with synthetic substitute, percutaneous endoscopic approach	04U04JZ	Supplement abdominal aorta with synthetic substitute, percutaneous endoscopic approach
04104JF	Bypass abdominal aorta to left external iliac artery with synthetic substitute, percutaneous endoscopic approach	04U04KZ	Supplement abdominal aorta with nonautologous tissue substitute, percutaneous endoscopic approach
04104JG	Bypass abdominal aorta to bilateral external iliac arteries with synthetic substitute, percutaneous endoscopic approach	04V03D6	Restriction of abdominal aorta, bifurcation, with intraluminal device, percutaneous approach
04104JH	Bypass abdominal aorta to right femoral artery with synthetic substitute, percutaneous endoscopic approach	04V03DJ	Restriction of abdominal aorta with intraluminal device, temporary, percutaneous approach
04104JJ	Bypass abdominal aorta to left femoral artery with synthetic substitute, percutaneous endoscopic approach	04V03DZ	Restriction of abdominal aorta with intraluminal device, percutaneous approach
04104JK	Bypass abdominal aorta to bilateral femoral arteries with synthetic substitute, percutaneous endoscopic approach	04V03E6	Restriction of abdominal aorta, bifurcation, with branched or fenestrated intraluminal device, one or two arteries, percutaneous approach

04104JQ	Bypass abdominal aorta to lower extremity artery with synthetic substitute, percutaneous endoscopic approach	04V03EZ	Restriction of abdominal aorta with branched or fenestrated intraluminal device, one or two arteries, percutaneous approach
04104JR	Bypass abdominal aorta to lower artery with synthetic substitute, percutaneous endoscopic approach	04V03F6	Restriction of abdominal aorta, bifurcation, with branched or fenestrated intraluminal device, three or more arteries, percutaneous approach
04104K0	Bypass abdominal aorta to abdominal aorta with nonautologous tissue substitute, percutaneous endoscopic approach	04V03FZ	Restriction of abdominal aorta with branched or fenestrated intraluminal device, three or more arteries, percutaneous approach
04104K6	Bypass abdominal aorta to right common iliac artery with nonautologous tissue substitute, percutaneous endoscopic approach	04V03Z6	Restriction of abdominal aorta, bifurcation, percutaneous approach
04104K7	Bypass abdominal aorta to left common iliac artery with nonautologous tissue substitute, percutaneous endoscopic approach	04V03ZZ	Restriction of abdominal aorta, percutaneous approach
04104K8	Bypass abdominal aorta to bilateral common iliac arteries with nonautologous tissue substitute, percutaneous endoscopic approach	04V04D6	Restriction of abdominal aorta, bifurcation, with intraluminal device, percutaneous endoscopic approach
04104K9	Bypass abdominal aorta to right internal iliac artery with nonautologous tissue substitute, percutaneous endoscopic approach	04V04DJ	Restriction of abdominal aorta with intraluminal device, temporary, percutaneous endoscopic approach
04104KB	Bypass abdominal aorta to left internal iliac artery with nonautologous tissue substitute, percutaneous endoscopic approach	04V04DZ	Restriction of abdominal aorta with intraluminal device, percutaneous endoscopic approach
04104KC	Bypass abdominal aorta to bilateral internal iliac arteries with nonautologous tissue substitute, percutaneous endoscopic approach	04V04E6	Restriction of abdominal aorta, bifurcation, with branched or fenestrated intraluminal device, one or two arteries, percutaneous endoscopic approach
04104KD	Bypass abdominal aorta to right external iliac artery with nonautologous tissue substitute, percutaneous endoscopic approach	04V04EZ	Restriction of abdominal aorta with branched or fenestrated intraluminal device, one or two arteries, percutaneous endoscopic approach

04104KF	Bypass abdominal aorta to left external iliac artery with nonautologous tissue substitute, percutaneous endoscopic approach	04V04F6	Restriction of abdominal aorta, bifurcation, with branched or fenestrated intraluminal device, three or more arteries, percutaneous endoscopic approach
04104KG	Bypass abdominal aorta to bilateral external iliac arteries with nonautologous tissue substitute, percutaneous endoscopic approach	04V04FZ	Restriction of abdominal aorta with branched or fenestrated intraluminal device, three or more arteries, percutaneous endoscopic approach
04104KH	Bypass abdominal aorta to right femoral artery with nonautologous tissue substitute, percutaneous endoscopic approach	04V04Z6	Restriction of abdominal aorta, bifurcation, percutaneous endoscopic approach
04104KJ	Bypass abdominal aorta to left femoral artery with nonautologous tissue substitute, percutaneous endoscopic approach	04V04ZZ	Restriction of abdominal aorta, percutaneous endoscopic approach
04104KK	Bypass abdominal aorta to bilateral femoral arteries with nonautologous tissue substitute, percutaneous endoscopic approach		