

CONTINUOUS VENTILATORY SUPPORT (CVS)

and

NON-INVASIVE VENTILATION (NIV)

SIXTH EDITION ICD-10-AM

Several changes were introduced ICD-10-AM 6th edition that impacted on the coding of all forms of ventilatory support. These changes included a name change for ACS 1006 from *Respiratory Support* to *Ventilatory Support*; the development of new codes for NIV; changes to the coding rules for NIV; and clarification of the coding rules for CVS.

In view of the importance to DHS and hospitals of the accurate coding and reporting of these data items, this article aims to provide further clarification for Victorian coders about the changes in 6th edition.

DEFINITIONS

CVS or invasive ventilation refers to the application of ventilation via an invasive artificial airway. For the purpose of this standard, invasive artificial airway is that provided via an endotracheal tube (ETT) or a tracheostomy tube. With CVS, the patient receives continuous variable degrees of assistance to meet respiratory requirements in an uninterrupted continuous fashion.

Noninvasive ventilation refers to all modalities that assist ventilation without the use of an ETT or tracheostomy. For the purpose of this standard, noninvasive devices include: face mask, mouthpiece, nasal mask, nasal pillows, nasal prongs, nasal tubes and nasopharyngeal tubes.

Comment: The important change that coders need to be aware of in these definitions is that nasopharyngeal tube, previously considered to be invasive ventilation, is now considered to be non invasive ventilation.

The type of ventilation provided is no longer used to determine whether or not the ventilatory support is invasive or non invasive. Rather the type of tube or the use of a tracheostomy is used to determine the type of ventilatory support.

CODING OF CVS AND NIV

1. New codes have been provided for NIV with differentiation based on duration in the same way as for CVS. Thus the available codes are as follows:

13882-00 [569] *Management of continuous ventilatory support, ≤ 24 hours*

13882-01 [569] *Management of continuous ventilatory support, > 24 and < 96 hours*

13882-02 [569] *Management of continuous ventilatory support, ≥ 96 hours*

92209-00 [570] *Management of noninvasive ventilatory support, ≤ 24 hours*

92209-01 [570] *Management of noninvasive ventilatory support, > 24 and < 96 hours*

92209-02 [570] *Management of noninvasive ventilatory support, ≥ 96 hours*

2. Intubation codes are only assigned when intubation occurs without ventilation – all patients.
3. No codes are assigned for the tube or mask that is used to deliver the ventilatory support.
4. There is no differentiation of coding rules based on age
5. The ventilatory support that is provided to a patient during surgery is associated with anaesthesia and is considered an integral part of the surgical procedure. Therefore, the following points apply for calculation of the duration of ventilatory for these patients:
 - a. Ventilatory support initiated in ED or ward, continuing through surgery. These patients are assigned a code based on total hours since intubation.
 - b. Ventilatory support initiated in theatre: These patients must have >24 hours of support **post surgery** before a code can be assigned. Once >24 hours have been provided the duration is counted from the time of intubation.
 - c. Ventilatory support initiated in theatre for multiple visits to theatre with extubation between visits: For each visit to theatre the patient must have >24 hours of support **post surgery** in order for those hours to be counted. If this criterion is met the hours are calculated from the time of intubation. CVS hours for all visits to theatre that meet this criterion are then added together to calculate the cumulative hours for coding.
 - d. Ventilatory support initiated in theatre for multiple visits to theatre without extubation between visits: The CVS that is continuous since the original surgery is considered to be continuous ventilation for respiratory support rather than for anaesthesia (patients would preferably be extubated before returning to theatre). The patient must receive >24 hours post original surgery before the hours can be coded. The calculation of duration then starts with the intubation for the original surgery and continues through all the subsequent visits to theatre.

REPORTING HOURS TO VAED – CVS AND NIV

There has been no change to the rules governing reporting of hours of CVS or NIV. The reporting of CVS provided in ICU or NICU is mandatory; the reporting of NIV hours provided in ICU or NICU is optional.

Instructions relating these data items can be found in the VAED Manuals, Section 3, pages 82 and 84, part of which is repeated here for your information. Please refer to the HDSS website (<http://www.health.vic.gov.au/hdss/vaed/index.htm>) for detailed information about the calculation and reporting of these data items.

Counting duration of CVS

If the patient has more than one period of MV in ICU during this episode, the total duration of all such periods is reported.

Duration is reported in hours, rounded up. Only MV hours provided in an ICU are counted:

- Where a patient is intubated and MV starts in an operating theatre, for the purposes of the Duration of MV field, *the counting of the duration of MV commences when the patient enters the ICU.*
- Where MV starts in ICU, continues while the patient is in an operating theatre and on the patient's return to ICU, *the count of duration should be suspended for the time the patient is out of the ICU.*
- Where a patient receives MV in a combined ICU/CCU, report the ICU/CCU hours in the ICU field, not the CCU field.

Counting duration of NIV

- All NIV hours given in NICU, SCN and/or ICU are counted.
- Reference below to '24-hour period' means 'midnight to midnight'.
- Where the NIV starts in an operating theatre, for the purpose of the Duration of NIV field, *the counting of the duration of NIV starts when the patient enters the NICU or SCN or ICU.*
- Where NIV starts in NICU or SCN or ICU, continues while the patient is in an operating theatre and on the patient's return to NICU, SCN or ICU, *the count of the duration should be suspended for the time the patient is out of the NICU or SCN or ICU.*

EXAMPLES

The following examples are provided to help coders understand the calculation of CVS hours for surgical patients

CVS Initiated Prior to patient going to Operating Room

- a) Pt intubated in ED on 1/7/08 at 13.00. At 16.30 patient taken to theatre for 4 hrs. Admitted to ICU at 20.30 and was extubated at 23.50 on 1/7/08

MV hrs for VAED (round up)	Total MV hrs count	Count for Coding
4	10hrs 50mins	10

Assign Code - 13882-00 Management of continuous ventilatory support, ≤24 hours because the patient was initially intubated for respiratory support not for anaesthesia.

- b) Patient intubated in ED at 3.00 6/8/08. He was transferred to ICU at 4.00 6/8/08 still intubated. At 13.00 he went to theatre for 3 hrs. He returned to ICU at 16.00 and was extubated at 12.00 8/8/08.

MV hrs for VAED (round up)	Total MV hrs count	Count for Coding
53	57	57

Assign Code- 13882-01 Management of continuous ventilatory support, > 24 and < 96 hours

CVS Initiated in Operating Room

- a) Pt intubated in theatre at 11.00 on 1/7/08. Went to ICU intubated at 16.00 after 5hrs in OR. Patient was extubated at 9.00 2/7/08.

MV hrs for VAED (round up)	Total MV hrs count	Count for Coding
17	22	-

*NO CODE assigned as patient was NOT intubated for >24 hours **post surgery**.*

- b) Patient intubated in OR at 9.00 on 1/7/08. After 3 hours in OR was transferred to ICU at 12.00 still intubated. Patient was extubated at 10.00 on 2/7/08

MV hrs for VAED (round up)	Total MV hrs count	Count for Coding
22	25	-

*NO CODE assigned as patient was NOT intubated for >24 hours **post surgery**.*

- c) Patient intubated in theatre at 12.00pm 6/8/08. Was in theatre for 3 hrs. Went to ICU at 15.00 for 8 hrs and remained ventilated. Patient then returned to theatre at 23.00 for 6 hrs and went back to ICU at 05.00hrs. Patient was extubated at 17.00 on the 7/8/08.

MV hrs for VAED (round up)	Total MV hrs count	Count for Coding
20	29	29

Assign code 13882-01 Management of continuous ventilatory support, > 24 and < 96 hours. Even though the ventilation was initiated for surgery, it continued for >24 hours post surgery (including subsequent surgical episodes). Therefore it should be coded as CVS for 29 hours.

- d) Patient intubated in OR for 6 hrs, then went to ICU where was ventilated for a further 20 hrs and extubated. Patient then returned to OR the next day where they were intubated for 5 hours and returned to ICU where was ventilated for a further 20 hours.

MV hrs for VAED (round up)	Total MV hrs count	Count for Coding (round down)
40	51	-

No code to be assigned because in both post surgical periods the patient was not intubated for >24 hours, each post surgical period must meet coding criteria in their own right for the coding of CMV hrs to occur.

- e) Patient intubated in OR for 6 hours, transferred to ICU still intubated for 13 hours before returning to OR for a further 2 hours. Patient is transferred back to ICU still intubated for a further 16 hrs before extubation.

MV hrs for VAED (round up)	Total MV hrs count	Count for Coding (round down)
29	37	37

*Assign code 13882-01 Management of continuous ventilatory support, > 24 and < 96 hours. Even though the ventilation was initiated for surgery, it continued for >24 hours **post surgery** (including subsequent surgical episodes). Therefore it should be coded as CVS for 37 hours.*

- f) Patient intubated in OR, surgery lasts for 6 hrs. Patient transferred to ICU while intubated, stays intubated for 20 hours and is extubated. Patient returns to theatre is intubated for surgery that lasts for 3hrs, returns to ICU and remains intubated for 30hrs before being extubated. Patient returns to theatre for a third time and is intubated for a procedure that lasts for 4 hrs and returns to ICU where they remain intubated for another 23 hours.

MV hrs for VAED (round up)	Total MV hrs count	Count for Coding (round down)
73	86	33

Assign code 13882-01 Management of continuous ventilatory support, > 24 and < 96 hours. Only one period of intubation met the criteria for coding, that was the second trip to theatre. The other two periods did not meet the criteria therefore can't be included in the total calculation of CVS hours for coding.

GROUPING IMPLICATIONS – CVS AND NIV

AR-DRG v5.2

CVS codes have an impact on DRG assignment as follows:

Code	DRG impact
13882-00 [569] <i>Management of continuous ventilatory support, ≤ 24 hours</i>	No impact
13882-01 [569] <i>Management of continuous ventilatory support, > 24 and < 96 hours</i>	E40Z, F40Z, P65B, P66B, P67B, W01Z, Y02A, Y62A
13882-02 [569] <i>Management of continuous ventilatory support, ≥ 96 hours</i>	A06Z, F40Z, P01Z, P03Z, P04Z, P05Z, P06A, P06B, W01Z, Y01Z, Y02A, Y62A

The new NIV codes provided in ICD-10-AM 6th edition will be mapped to the following codes for grouping in AR-DRG V5.2. They will impact on DRG assignment as follows:

Code	DRG impact
92038-00 <i>Continuous positive airway pressure [CPAP]</i>	E41Z, P65B, P66B, P67B
92039-00 <i>Bi-level positive airway pressure [BiPAP]</i>	E41Z
92040-00 <i>Intermittent positive pressure breathing [IPPB]</i>	E41Z

AR-DRG v6.0

The following information is based on recommendations made to and accepted by the States and Territories AR-DRG Classification, Version 6.0 meeting held in January 2008. Some changes may have been made since then. This is therefore an estimation of the impact of these codes on DRG assignment and cannot be confirmed until the AR-DRG v6.0 Definitions Manuals are released in September 2008.

Code	DRG impact
13882-00 [569] <i>Management of continuous ventilatory support, ≤ 24 hours</i>	No impact
13882-01 [569] <i>Management of continuous ventilatory support, > 24 and < 96 hours</i>	E40Z, F40Z, P65B, P66B, P67B, W01Z, Y02A, Y62A
13882-02 [569] <i>Management of continuous ventilatory support, ≥ 96 hours</i>	A06Z, P01Z, P03Z, P04Z, P05Z, P06A, P06B, Y01Z,
92209-00 [570] <i>Management of noninvasive ventilatory support, ≤ 24 hours</i>	No impact
92209-01 [570] <i>Management of noninvasive ventilatory support, > 24 and < 96 hours</i>	E41Z, F43Z, P65B, P66B, P67B
92209-02 [570] <i>Management of noninvasive ventilatory support, ≥ 96 hours</i>	E41Z, F43Z, P01Z, P03Z, P04Z, P05Z, P06A, P06B