

Person—partial pressure of carbon dioxide, millimetres of mercury NNN

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Person—partial pressure of carbon dioxide, millimetres of mercury NNN

Identifying and definitional attributes

Metadata item type:	Data Element
Short name:	Partial pressure of carbon dioxide
METEOR identifier:	320642
Registration status:	Health! , Recorded 14/07/2006
Definition:	The partial pressure of carbon dioxide in a person's arterial blood gas measured in millimetres of mercury.
Data Element Concept:	Person—partial pressure of carbon dioxide
Value Domain:	Millimetres of mercury NNN

Value domain attributes

Representational attributes

Representation class:	Total	
Data type:	Number	
Format:	NNN	
Maximum character length:	3	
	Value	Meaning
Supplementary values:	999	Not stated/inadequately described
Unit of measure:	Millimetre of mercury (mmHg)	

Data element attributes

Source and reference attributes

Submitting organisation:	ANZICS Database Management Committee
Reference documents:	Knaus WA, Draper EA, Bergner M, Murphy DJ, Harrell FE. The APACHE III Prognostic System: Risk Prediction of Hospital Mortality for Critically Ill Hospitalized adults. Chest 1991;100:1619-1636.

Relational attributes

Implementation in Data Set Specifications:	Intensive care DSS Health! , Recorded 14/07/2006
	DSS specific information:
	Required for use in the assessment of severity of illness in intensive care patients. Used to adjust for case-mix in statistical reports.
	If Partial pressure of carbon dioxide (PaCO ₂) in arterial blood gas is not collected or recorded, use code 999.
	Used in the calculation of APACHE II and APACHE III scores.
	Oxygenation method for APACHE II and APACHE III:
	When the FiO ₂ is less than 0.5 mmHg, record the value associated with the

quantitatively lowest Partial pressure of oxygen (PaO₂) only.

When the Fractional value of inspired oxygen (FiO₂) is 0.50 mmHg or greater, APACHE II & III scores require the use of an algorithm for oxygenation called the alveolar-arterial (A-a) gradient for determining the PaCO₂ to record. All variables used in the oxygenation method calculation must come from the one blood gas sample.

Acid-Base method for APACHE III:

All variables used in the acid-base method calculation must come from the one blood gas sample.

In conjunction with the pH of the same blood sample, the PaCO₂ associated with the highest points according to the APACHE III acid-base scoring algorithm is recorded.

The PaCO₂ is determined from a patient's blood collected over the first 24 hours of intensive care.

APACHE III and APACHE II scores calculation — oxygenation method:

For non-intubated patients or intubated patients whose FiO₂ is <0.5 mmHg, record the PaCO₂ associated with the arterial blood gas sample with the lowest PaO₂.

For intubated patients whose oxygen is >0.5 mmHg, record the PaCO₂ from the arterial blood gas with the highest alveolar arterial (A-A) gradient. Use the following formula to calculate the A-a gradient:

$$A-a \text{ gradient} = 713 \times FiO_2 - PaO_2 - PaCO_2$$

APACHE III score calculation—acid-base scoring algorithm:

In conjunction with the pH of the same blood sample, record the partial pressure of carbon dioxide associated with the highest points APACHE III acid-base scoring algorithm. The point weight score is calculated using the table below.

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PaCO ₂ pH	<25	25- <30	30- <35	35- <40	40- <45	45- <50	50- <55	55- <60	≥60	
<7.15	12						4			
7.15-<7.2										
7.20-<7.25	9		6		3		2			
7.25-<7.30										
7.30-<7.35			0			1				
7.35-<7.40									5	
7.40-<7.45										
7.45-<7.50			2		12					
7.50-<7.55	3				12					
7.55-<7.60										
7.60-<7.65	0									

>7.65			
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