

## Analysis Method Notice

### Amenable mortality per 100,000 of the European standardised population

This notice describes an Analysis Method that has been developed for use in the production of published national outcome indicators, performance measures and/or currencies, which are derived directly from NHS Wales data.

The Analysis Method has been reviewed by the Analysis Methodologies Group and its output submitted to the Welsh Information Standards Board (WISB) for potential accreditation.

*It should be noted that, where the data flow on which the analysis is being undertaken has not been reviewed by WISB (see 'Status of WISB Data Standards Assurance' below), accreditation of the analysis method **cannot** be interpreted as an approval of the underlying data standards or the quality of the data used.*

*It is recognised that formal review and/or assurance of the data flow may have been undertaken by other bodies, where those data are being formally published; for example, as 'Official Statistics'. In such circumstances, users of this method are advised to contact the relevant organisations should they require further information on the underlying quality of the specified data source.*

For further details about the group, including Terms of Reference and membership, please visit the following website:

<http://howis.wales.nhs.uk/sites3/page.cfm?orgid=742&pid=56696>

**WISB Reference:** ISRN 2018 / 002

Please address enquiries about this Analysis Method the NHS Wales Informatics Service Data Standards Team.

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<b>WISB Analysis Method Appraisal Assessment</b>	<b>Accredited</b> This Analysis Method has been appraised by WISB and is felt to: <ul style="list-style-type: none"> <li>• Meet the specified indicator requirement, in that it is suitable for its calculation / derivation;</li> <li>• Is reproducible by organisations, where appropriate.</li> </ul>
<b>WISB Analysis Method Appraisal Outcome(s)</b>	

<b>Status of Data Standards Assurance</b>	<b>WISB Reviewed</b> The data used in this Analysis Method are based on data item standards that have been through the Information Standards Assurance Process.
<b>WISB Decision</b>	<b>Approved</b>
<b>Data Standards Assurance Outcome(s)</b>	

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**Indicator**

Amenable mortality per 100,000 of the European standardised population.

**Target:**

Annual reduction.

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**Rationale / Context**

An effective indicator of healthcare quality is the number of deaths that occur for conditions that are treatable and could be avoided through timely and effective healthcare\*. It highlights areas of potential weaknesses in healthcare that could benefit from further investigation.

\*Note: Factors such as the lifestyle and age of the patient, the extent of disease progression at diagnosis and the potential existence of other medical conditions means that not all deaths from the identified condition can be avoided.

This measure links to wide variety of health delivery plans that can be sourced from:

<http://gov.wales/topics/health/nhswales/plans/?lang=en>

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**Data Source(s)**

Public Health Wales

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**Definitions:****Definitional Guidance:****Data Items:**

n/a

**Terms:**

n/a

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**Detailed Specification**

To calculate the indicator, the following calculation is to be used:

$$\frac{\sum w r}{\sum w} \times 100,000 \text{ (expressed per 100,000 population)}$$

$\sum$  is the age group (<1, 1-4, 5-9, 10-14 .... 85-89, 90+)

w is the number, or proportion, of individuals in the standard population in age group  $\sum$

r is the observed age-specific rate in the subject population in age group  $\sum$ , given by:

$$r = \frac{d}{n}$$

d is the observed number of deaths in the subject population in age group

n is the number of individuals in the subject population in age group

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Data is based on individual death registrations. Figures are for persons usually resident in each local health board area.

Figures are for deaths (based on final cause of death) registered in each calendar year.

A revised definition for amenable mortality was introduced in 2014; as a result, comparisons with data published prior to 2014 should not be made.

**Required ICD-10 Codes:**

The age range is 0-74 years unless specified

**Infections:**

A00-A09 (for 0-14 years of age)

A15-A19

A35

A36-A41

A46

A48.1

A80

B01

B05 (for 1-14 years of age)

B17.1

B18.2

B20-B24 (all ages)

B50-B54

B90

G00

G03

J02

L03

**Neoplasms:**

C18-C21

C43

C50

C53

C54-C55 (for 0-44 years of age)

C62

C67

C73

C81

C91

C92.0

D10-D36

**Nutritional, endocrine and metabolic:**

E00-E07

E10-E14

E27.1

**Neurological disorders:**

G40-G41

**Cardiovascular diseases:**

I01-I15

I20-I25

I60-I69

**Respiratory diseases:**

J00-J06 (for 1-14 years of age)  
J09-J18  
J20-J22 (for 1-14 years of age)  
J30-J39 (for 1-14 years of age)  
J40-J46

**Digestive disorders:**

K25-K28  
K35-K38  
K40-K46  
K80-K83  
K85  
K86.1-K86.9  
K91.5

**Genitourinary disorders:**

N00-N07  
N13  
N17-N21  
N25-N27  
N35  
N40  
N99.1

**Maternal and infant:**

A33 (all ages)  
P00-P96 (all ages)  
Q20-Q28

**Intentional injuries:**

Y60-Y69 (all ages)  
Y83-Y84 (all ages)

Further details of the International Classification of Diseases, tenth revision (ICD-10) codes are available in the section entitled 'Additional Information'.

**Mid year population estimates:**

Mid-year population estimates are used to calculate observed age-specific rates, which are then age-standardised to the 2013 European Standard Population. Data is produced and reported annually and relates to the 30 June of each year. Further details on mid-year population estimates are available at Office for National Statistics.

Although age limits were set for some cause groups, rates were calculated using people for all ages as the denominator.

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**Calculation:**

***Numerator***

Number of potentially amenable deaths registered in the year.

***Denominator***

Mid-year population estimates.

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**Reporting Format / Frequency**

Reporting Frequency	Annual
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Time Delay of Reported Data?	Around 16-17 months following the end of the reference period (2015 data was published during April 2017)

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### **Discussion Points / Areas for Future Development**

*This section details any areas the Analysis Methodologies Group felt needed further consideration / review by the 'owner' of the method.*

## **Appendix A – Additional Information**

Statistics on mortality are derived from the information provided when deaths are certified and registered.

Further information about the methods and quality of these statistics can be found at:

<https://www.ons.gov.uk/peoplepopulationandcommunity/birthsdeathsandmarriages/deaths/methodologies/userguidetomortalitystatisticsjuly2017>

Detailed information on avoidable mortality statistics (including amenable mortality) is published by ONS at the following links.

<https://www.ons.gov.uk/peoplepopulationandcommunity/healthandsocialcare/causesofdeath/qmis/avoidablemortalityinenglandandwalesqmi>

<https://www.ons.gov.uk/peoplepopulationandcommunity/healthandsocialcare/causesofdeath/bulletins/avoidablemortalityinenglandandwales/previousReleases>

### **ICD-10 Codes**

#### **Infections**

Intestinal infectious diseases	
A00	Cholera
A01	Typhoid and paratyphoid fevers
A02	Other salmonella infections
A03	Shigellosis
A04	Other bacterial intestine infections
A05	Other bacterial foodborne intoxications, not elsewhere classified
A06	Amoebiasis
A07	Other protozoal intestinal diseases
A08	Viral and other specified intestinal infections
A09	Other gastroenteritis and colitis of infectious and unspecified origin

Tuberculosis	
A15	Respiratory tuberculosis, bacteriologically and histologically confirmed
A16	Respiratory tuberculosis, not confirmed bacteriologically and histologically
A17	Tuberculosis of nervous system
A18	Tuberculosis of other organs
A19	Miliary tuberculosis
B90	Sequelae of tuberculosis

Selected invasive bacterial and protozoal infections	
A38	Scarlet fever
A39	Meningococcal infection
A40	Streptococcal sepsis
A41	Other sepsis
A46	Erysipelas
A48.1	Legionnaires disease
B50	Plasmodium falciparum malaria
B51	Plasmodium vivax malaria
B52	Plasmodium malariae malaria

B53	Other parasitologically confirmed malaria
B54	Unspecified malaria
G00	Bacterial meningitis, not elsewhere classified
G03	Meningitis due to other unspecified causes
J02	Acute pharyngitis
L03	Cellulitis

Hepatitis C	
B17.1	Acute hepatitis c
B18.2	Chronic viral hepatitis c

A37	Pertussis (whooping cough)
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B05	Measles
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Other infections	
A35	Other tetanus
A36	Diphtheria
A80	Acute poliomyelitis
B01	Varicella (chicken pox)

HIV/AIDS	
B20	Human immunodeficiency virus (HIV) disease resulting in infectious and parasitic diseases
B21	Human immunodeficiency virus (HIV) disease resulting in malignant neoplasms
B22	Human immunodeficiency virus (HIV) disease resulting in other specified diseases
B23	Human immunodeficiency virus (HIV) disease resulting in other conditions
B24	Unspecified human immunodeficiency virus (HIV) disease

## Neoplasms

Malignant neoplasm of colon and rectum	
C18	Malignant neoplasm of colon
C19	Malignant neoplasm rectosigmoid junction
C20	Malignant neoplasm of rectum
C21	Malignant neoplasm of anus and anal canal

C43	Malignant melanoma of skin
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C50	Malignant neoplasm of breast
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C53	Malignant neoplasm of cervix uteri
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C67	Malignant neoplasm of bladder
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C73	Malignant neoplasm of thyroid gland
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C81	Hodgkin lymphoma
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Leukaemia	
C91	Lymphoid leukaemia
C92.0	Acute myeloblastic leukaemia

C62	Malignant neoplasm of testis
Malignant neoplasm of unspecified parts of uterus and body of uterus	
C54	Malignant neoplasm of corpus uteri
C55	Malignant neoplasm of uterus, part unspecified
Benign neoplasms	
D10	Benign neoplasm of mouth and pharynx
D11	Benign neoplasm of major salivary glands
D12	Benign neoplasm of colon, rectum, anus and anal canal
D13	Benign neoplasm of other and ill defined parts of digestive system
D14	Benign neoplasm of middle ear and respiratory system
D15	Benign neoplasm of other unspecified intrathoracic organs
D16	Benign neoplasm of the bone and articular cartilage
D17	Benign lipomatous neoplasm
D18	Haemangioma and lymphangioma, any site
D19	Benign neoplasm of mesothelial tissue
D20	Benign neoplasm of soft tissue of retroperitoneum and peritoneum
D21	Other benign neoplasm of connective and other soft tissue
D22	Melanocytic naevi
D23	Other benign neoplasms of skin
D24	Benign neoplasm of breast
D25	Leiomyoma of uterus
D26	Other benign neoplasm of uterus
D27	Benign neoplasm of ovary
D28	Benign neoplasm of other and unspecified female genital organs
D29	Benign neoplasm of male genital organs
D30	Benign neoplasm of urinary organs
D31	Benign neoplasm of eye and adnexa
D31	Benign neoplasm of meninges
D33	Benign neoplasm of brain and other parts of central nervous system
D34	Benign neoplasm of thyroid gland
D35	Benign neoplasm of other and unspecified endocrine glands
D36	Benign neoplasm of other and unspecified sites

### Nutritional, endocrine and metabolic

Diabetes mellitus	
E10	Insulin dependent diabetes mellitus
E11	Non insulin dependent diabetes mellitus
E12	Malnutrition related diabetes mellitus
E13	Other specified diabetes mellitus
E14	Unspecified diabetes mellitus
Diseases of the thyroid	
E00	Congenital iodine deficiency syndrome

E01	Iodine deficiency related thyroid disorder and allied conditions
E02	Subclinical iodine deficiency hypothyroidism
E03	Other hypothyroidism
E04	Other nontoxic goitre
E05	Thyrotoxicosis (hyperthyroidism)
E06	Thyroiditis
E07	Other disorder of thyroid
E27.1	Primary adrenocortical insufficiency

### Neurological disorders

Epilepsy and status epilepticus	
G40	Epilepsy
G41	Status epilepticus

### Cardiovascular diseases

Rheumatic and other valvular heart diseases	
I01	Rheumatic fever with heart involvement
I02	Rheumatic chorea
I05	Rheumatic mitral valve disease
I06	Rheumatic aortic valve disease
I07	Rheumatic tricuspid valve disease
I08	Multiple valve disease
I09	Other rheumatic heart diseases

Hypertensive diseases	
I10	Essential (primary) hypertension
I11	Hypertensive heart disease
I12	Hypertensive renal disease
I13	Hypertensive heart and renal disease
I15	Secondary hypertension

Ischaemic heart disease	
I20	Angina pectoris
I21	Acute myocardial infarction
I22	Subsequent myocardial infarction
I23	Certain current complications following acute myocardial infarction
I24	Other acute ischaemic heart disease
I25	Chronic ischaemic heart disease

Cerebrovascular diseases	
I60	Subarachnoid haemorrhage
I61	Intra cerebral haemorrhage
I62	Other non traumatic intracranial haemorrhage
I63	Cerebral infarction
I64	Stroke, non specified as haemorrhage or infarction

I65	Occlusion and stenosis of pre cerebral arteries, not resulting in pre cerebral infarction
I06	Occlusion and stenosis of cerebral
I67	Other cerebrovascular diseases
I68	Cerebrovascular disorders in diseases classified elsewhere
I69	Sequelae of cerebrovascular diseases

## Respiratory diseases

Influenza (including swine flu)	
J09	Influenza due to certain identified influenza virus
J10	Influenza due to other identified influenza virus
J11	Influenza, virus not identified

Pneumonia	
J12	Viral pneumonia, not elsewhere classified
J13	Pneumonia due to streptococcus pneumoniae
J14	Pneumonia due to haemophilus influenza
J15	Bacterial pneumonia, not elsewhere classified
J16	Pneumonia due to infectious organisms not elsewhere classified
J17	Pneumonia in disease classified elsewhere
J18	Pneumonia, organism unspecified

Chronic Obstructive pulmonary disorder	
J40	Bronchitis, not specified as acute or chronic
J41	Simple and mucopurulent chronic bronchitis
J42	Unspecified chronic bronchitis
J43	Emphysema
J44	Other chronic obstructive pulmonary disease

Asthma	
J45	Asthma
J46	Status asthmaticus

Selected respiratory diseases	
J00	Acute nasopharyngitis (common cold)
J01	Acute sinusitis
J02	Acute pharyngitis
J03	Acute tonsillitis
J04	Acute laryngitis and tracheitis
J05	Acute obstructive laryngitis (croup) and epiglottitis
J06	Acute upper respiratory infections of multiple and unspecified sites
J20	Acute bronchitis
J21	Acute bronchiolitis
J22	Unspecified acute lower respiratory infection
J30	Vasomotor and allergic rhinitis
J31	Chronic rhinitis, nasopharyngitis and pharyngitis

J32	Chronic sinusitis
J33	Nasal polyp
J34	Other disorders of the nose and nasal sinuses
J35	Chronic disease of tonsils and adenoids
J36	Peritonsillar abscess
J37	Chronic laryngitis and laryngotracheitis
J38	Disease of vocal cords and larynx not elsewhere classified
J39	Other diseases of upper respiratory tract

### Digestive disorders

Gastric and duodenal ulcer	
K25	Gastric ulcer
K26	Duodenal ulcer
K27	Peptic ulcer, site unspecified
K28	Gastrojejunal ulcer

Acute abdomen, appendicitis, intestinal obstructions, cholecystitis/lithiasis, pancreatitis, hernia	
K35	Acute appendicitis
K36	Other appendicitis
K37	Unspecified appendicitis
K38	Other disease of appendix
K40	Inguinal hernia
K41	Femoral hernia
K42	Umbilical hernia
K43	Ventral hernia
K44	Diaphragmatic hernia
K45	Other abdominal hernia
K46	Unspecified abdominal hernia
K80	Cholelithiasis
K81	Cholecystitis
K82	Other diseases of gallbladder
K83	Other diseases of biliary tract
K85	Acute pancreatitis
K86.1	Other chronic pancreatitis
K86.2	Cyst of pancreas
K86.3	Pseudocyst of pancreas
K86.8	Other specified diseases of pancreas
K86.9	Disease of pancreas unspecified
K91.5	Post cholecystectomy syndrome

### Genitourinary disorders

Nephritis and nephrosis	
N00	Acute nephritic syndrome
N01	Rapidly progressive nephritic syndrome

N02	Recurrent and persistent haematuria
N03	Chronic nephritic syndrome
N04	Nephrotic syndrome
N05	Unspecified nephritic syndrome
N06	Isolated proteinuria with specified morphological lesion
N07	Hereditary nephropathy, not elsewhere classified
N17	Acute renal failure
N18	Chronic kidney disease
N19	Unspecified kidney failure
N25	Disorders resulting from impaired renal tubular function
N26	Unspecified contracted kidney
N27	Small kidney of unknown cause

Obstructive uropathy and prostatic hyperplasia	
N13	Obstructive and reflux uropathy
N20	Calculus of kidney and ureter
N21	Calculus of lower urinary tract
N35	Urethral stricture
N40	Hyperplasia of prostate
N99.1	Post procedural urethral stricture

## Maternal and infant

Complications of perinatal period	
P00	Fetus and newborn affected by maternal conditions that may be unrelated to present pregnancy
P01	Fetus and newborn affected by maternal complications of pregnancy
P02	Fetus and newborn affected by complications of the placenta, cord and membranes
P03	Fetus and newborn affected by other complications of labour and delivery
P04	Fetus and newborn affected by noxious influences transmitted via placenta or breast milk
P05	Slow fetal growth and fetal malnutrition
P07	Disorders related to short gestation and low birth weight not elsewhere classified
P08	Disorders related to long gestation and high birth weight
P10	Intracranial laceration and haemorrhage due to birth injury
P11	Other birth injuries to central nervous system
P12	Birth injury to scalp
P13	Birth injury to skeleton
P14	Birth injury to peripheral nervous system
P15	Other birth injuries
P20	Intrauterine hypoxia
P21	Birth asphyxia
P22	Respiratory distress of newborn
P23	Congenital pneumonia

P24	Neonatal aspiration syndromes
P25	Interstitial emphysema and related conditions
P26	Pulmonary haemorrhage originating in the perinatal period
P27	Chronic respiratory disease originating in the perinatal period
P28	Other respiratory conditions originating in the perinatal period
P29	Cardiovascular disorders originating in the perinatal period
P35	Congenital viral diseases
P35	Bacterial sepsis of newborn
P37	Other congenital infections and parasitic diseases
P38	Omphalitis of newborn with or without mild haemorrhage
P39	Other infections specific to perinatal period
P50	Fetal blood loss
P51	Umbilical haemorrhage of newborn
P52	Intracranial non-traumatic haemorrhage of fetus and newborn
P53	Haemorrhagic disease of fetus and newborn
P54	Other neonatal haemorrhages
P55	Haemolytic disease of fetus and newborn
P56	Hydrops fetalis due to haemolytic disease
P57	Kernicterus
P58	Neonatal jaundice due to other excessive haemolysis
P59	Neonatal jaundice from other unspecified causes
P60	Disseminated intravascular coagulation of fetus and newborn
P61	Other perinatal haematological disorders
P70	Transitory disorders of carbohydrate metabolism specific to fetus and newborn
P71	Transitory neonatal disorders of calcium and magnesium metabolism
P72	Other transitory neonatal endocrine disorders
P74	Other transitory neonatal electrolyte and metabolic disturbances
P75	Meconium ileus in cystic fibrosis
P76	Other intestinal obstruction of newborn
P77	Necrotizing enterocolitis of fetus and newborn
P78	Other perinatal digestive system disorders
P80	Hypertermia of newborn
P81	Other disturbances of temperature regulation of newborn
P83	Other conditions of integument specific to fetus and newborn
P90	Convulsions of newborn
P91	Other disturbances of cerebral status of newborn
P92	Feeding problems of newborn
P93	Reactions and intoxications due to drugs administered for fetus and newborn
P94	Disorders of muscle tone of newborn
P95	Fetal death of unspecified cause
P96	Other conditions originating in the perinatal period
A33	Tetanus neonatorum

Congenital malformations of the circulatory system
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Q20	Congenital malformations of cardiac chambers and connections
Q21	Congenital malformations of cardiac septa
Q22	Congenital malformations of pulmonary and tricuspid valves
Q23	Congenital malformations of aortic and mitral valves
Q24	Other congenital malformations of heart
Q25	Congenital malformations of great arteries
Q26	Congenital malformations of great veins
Q27	Other congenital malformations of peripheral vascular system
Q28	Other congenital malformations circulatory system

#### Intentional injuries

Misadventures to patients during surgical and medical care	
Y60	Unintentional cut, puncture, perforation or haemorrhage during surgical and medical care
Y61	Foreign object accidentally left in body during surgical and medical care
Y62	Failure of sterile precautions during surgical and medical care
Y63	Failure in dosage during surgical and medical care
Y64	Contaminated medical or biological substances
Y65	Other misadventures during surgical and medical care
Y66	Non administration of surgical and medical care
Y69	Unspecified misadventure during surgical and medical care
Y83	Surgical operation and other surgical procedure as the cause of abnormal reaction of the patient, or of later complication, without mention of misadventure at the time of procedure
Y84	Other medical procedures as the cause of abnormal reaction of the patient, or of the later complication, without mention of misadventure at the time of procedure

**Appendix B – SQL Code** (where applicable)

n/a