

## Analysis Method Notice

### Healthy Days at Home Wales Measure

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:

[Welsh Information Standards Board \(WISB\) - Digital Health and Care Wales \(nhs.wales\)](https://www.wisb.wales/)

**WISB Reference:** ISRN 2022 / 047

Please address enquiries about this Analysis Method to the DHCW Data Standards team:

E-mail: [data.standards@wales.nhs.uk](mailto:data.standards@wales.nhs.uk) / Tel: 029 2050 2539

<b>WISB Analysis Method Appraisal Assessment</b>	Requirement Notification <sup>1</sup>
<b>WISB Analysis Method Appraisal Outcome(s)</b>	Approved for progression to next stage <sup>2</sup> – December 2022
<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>	Analysis Methods Notice: Approved with Caveats – April 2023
<b>Data Standards Assurance Outcome(s)</b>	Analysis Methods Notice Outcome <sup>3</sup>

1

[https://nhswales365.sharepoint.com/sites/DHC\\_DST/Shared%20Documents/Forms/AllItems.aspx?id=%2Fsites%2FDHC%5FDST%2FShared%20Documents%2FWISB%2F20221215%2DSUB%2DRN%2DHealthy%20Days%20at%20Home%2Epdf&parent=%2Fsites%2FDHC%5FDST%2FShared%20Documents%2FWISB](https://nhswales365.sharepoint.com/sites/DHC_DST/Shared%20Documents/Forms/AllItems.aspx?id=%2Fsites%2FDHC%5FDST%2FShared%20Documents%2FWISB%2F20221215%2DSUB%2DRN%2DHealthy%20Days%20at%20Home%2Epdf&parent=%2Fsites%2FDHC%5FDST%2FShared%20Documents%2FWISB)

2

[https://nhswales365.sharepoint.com/sites/DHC\\_DST/Shared%20Documents/Forms/AllItems.aspx?id=%2Fsites%2FDHC%5FDST%2FShared%20Documents%2FWISB%2F20221215%2DOUT%2DRN%2DHealthy%20Days%20at%20Home%2Dd0%2D1%2Epdf&parent=%2Fsites%2FDHC%5FDST%2FShared%20Documents%2FWISB](https://nhswales365.sharepoint.com/sites/DHC_DST/Shared%20Documents/Forms/AllItems.aspx?id=%2Fsites%2FDHC%5FDST%2FShared%20Documents%2FWISB%2F20221215%2DOUT%2DRN%2DHealthy%20Days%20at%20Home%2Dd0%2D1%2Epdf&parent=%2Fsites%2FDHC%5FDST%2FShared%20Documents%2FWISB)

3

[https://nhswales365.sharepoint.com/sites/DHC\\_DST/Lists/Information%20Standards%20Assurance%20Submission%20Log/DispForm.aspx?ID=550&e=i0S6VH](https://nhswales365.sharepoint.com/sites/DHC_DST/Lists/Information%20Standards%20Assurance%20Submission%20Log/DispForm.aspx?ID=550&e=i0S6VH)

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## Indicator

Healthy Days at Home Wales Measure

### **Target:**

Improvement

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## Rationale / Context

To measure/compare health outcomes using a single quality measure

Healthy Days at Home Wales (HDAH) is a population-based quality measure which can provide a single way of measuring/comparing health and care systems across Wales and can also be adapted to reflect local priorities. The tool has already been validated in the US and the intention now is to use the principles and mechanisms to tailor it to the Welsh NHS and health care environment.

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## Data Source(s)

Welsh Ambulance Service Trust (WAST)<sup>4</sup>  
Emergency Department Dataset (ED Ds)<sup>5</sup>  
Outpatient Data Dataset (OD Ds)<sup>6</sup>  
Admitted Patient Care Dataset (APC Ds)<sup>7</sup>  
Office for National Statistics (ONS)<sup>8</sup>  
Welsh Demographic Service (WDS)

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## Definitions:

### **Definitional Guidance:**

#### **Data Items:**

Target year: The calendar (or financial) year for which Healthy Days at Home Wales is calculated, e.g., the calendar year of 2019

Mortality Days – The total number of days in the target year after an individual has died. The ONS deaths dataset contains a list of NHS numbers and their death date. If an individual has died in the target year, then

Mortality days = Final date of target year – death date

Inpatient Days – The total number of days for which an individual has been admitted to hospital in the target year, this includes short stays such as medical assessment unit (MAU), step up/step down encompassing all community bedded units, community hospitals and individually commissioned beds, clinical decision units as well as long term admissions.

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<sup>4</sup> Data standard in development, however a agreement does exist between DHCW and WAST for the data to be used for this purpose – see [https://nhs.wales365.sharepoint.com/:b:/r/sites/InformationProgrammesManagementTeam/Team%20Documents/ISD%20IG-GDPR/Information%20Governance%20Info%20Flows/Data%20Sharing%20Agreements/WAST/Agreement%20DD%20and%20DP%20NWIS%20and%20WAST%20v1\\_.pdf?csf=1&web=1&e=4RD14F](https://nhs.wales365.sharepoint.com/:b:/r/sites/InformationProgrammesManagementTeam/Team%20Documents/ISD%20IG-GDPR/Information%20Governance%20Info%20Flows/Data%20Sharing%20Agreements/WAST/Agreement%20DD%20and%20DP%20NWIS%20and%20WAST%20v1_.pdf?csf=1&web=1&e=4RD14F) (NHS Wales users only)

<sup>5</sup> <https://www.datadictionary.wales.nhs.uk/WordDocuments/emergencydepartmentdataseteds2.htm>

<sup>6</sup> <https://www.datadictionary.wales.nhs.uk/WordDocuments/outpatientdatasetops2.htm>

<sup>7</sup> <https://www.datadictionary.wales.nhs.uk/WordDocuments/admittedpatientcaredatasetapcds2.htm>

<sup>8</sup> DHCW receives a copy of a mortality file from ONS routinely for use in direct and indirect care – see <https://nhs.wales365.sharepoint.com/:b:/r/sites/NSM/Approved%20Service%20Details/2020-03-31%20-%20Letter%20to%20DHCW%20on%20data%20collection.pdf?csf=1&web=1&e=5ePQ00> (NHS Wales users only)

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Total inpatient days = LOS provider spell 1 + LOS provider spell 2 + ... + LOS provider spell n  
Where

- *Provider spell is defined as per provider spell methodology<sup>9</sup>*
- *LOS = Provider spell end date – provider spell start date*
- *N = Number of provider spells in the target year*

If the provider spell start date is before the start date of the target year, then the start date of the target year is used instead. Similarly, if the provider spell end date occurs after the end date of the target year, then the end date of the target year is used.

APC Ds includes open provider spells. In cases where the provider spell does not have an end date, then the end of the target year is used instead. Mental health (MH) activity is included within inpatient days. Patients who have not been discharged from a MH unit but live at home (or a residence other than the MH unit) are classed as having an open spell, and previously mentioned methodology is applied.

Not all health boards include MAU activity in their APC Ds submissions, hence this activity is a gap in the data when calculating total inpatient days.

Ambulance Days – A list of incidents is obtained from WAST's Computer Aided Dispatch (CAD) Incidents Dataset. A Patient Clinical Record (PCR) is a form which ambulance crews complete for a patient and contains the patient's NHS number. PCRs are then linked to the CAD incidents. Thus,

Ambulance Days = total number of ambulance incidents where an ambulance crew has completed a Patient Clinical Record (PCR) for a patient

Outpatient Days – The total number of outpatient appointments an individual attended in the target year. All appointments with an 'attend or did not attend code'<sup>10</sup> of 5 and 6 are included (i.e. appointments where the patient was on time, or late but still seen).

Emergency Department Visits: The number of attendances recorded at Accident and Emergency and/or Minor Injury Units in the target year. Each attendance counts as a day unless the overall attendance exceeds 24 hours in which case the duration in hours is rounded up to days.

If the administrative arrival date is before the start date of the target year, then the start date of the target year is used instead. Similarly, if the treatment end date occurs after the end date of the target year, then the end date of the target year is used.

Cohort – The Welsh Demographic Service (WDS) is a register of demographic details for Welsh residents. It provides their NHS number, and the dates between which the patient was registered with their GP. Thus, a list of residents in Wales active for the entire target year can be extracted.

Since only a list of active residents in Wales is used as the cohort, it could be the case that residents within this cohort are residents of care/nursing home. Thus, 'at home' is interpreted as residents whose primary residence is not a hospital setting.

### **Terms:**

Mortality weight: Weight applied to mortality days

Inpatient weight: Weight applied to inpatient days

Ambulance weight: Weight applied to ambulance days

Outpatient weight: Weight applied to outpatient days

Emergency department weight: Weight applied to emergency department days

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## **Detailed Specification**

<sup>9</sup> <https://dhcw.nhs.wales/information-services/information-standards/data-standards/data-standards-files/analysis-method-notices-docs/amn-2015/20150130-sop-am-2015-05-provider-spells-v1-pdf/>

<sup>10</sup> <https://www.datadictionary.wales.nhs.uk/#!WordDocuments/attendedordidnotattend.htm>

All data items are calculated using datasets which contain a patient's NHS number. Thus, all data items can be joined to the cohort on NHS number. The cohort is intentionally chosen such that the person is active in Wales for the entirety of the target year and also has a valid NHS number. It is potentially the case that the cohort is unrepresentative of Wales.

Outpatient days, ambulance days, emergency department days, inpatient days, and mortality days are excluded if there is no valid NHS number associated with them since it is not possible to join these to the cohort.

Days are counted as whole numbers, not fractions or decimals. Where more than one event occurs on one day, the intervention with the highest negative rating applies.

This follows the hierarchal order of mortality days > inpatient days > emergency department days > ambulance days > outpatient days.

A 'weighting' is the multiplication factor applied to the number of days attributed to a specific component of the formula. A weighting can be positive or negative. A positive weighting suggests a desirable outcome for the individual whereas a negative weighting suggests a less desirable outcome for the individual. A weighting can be an integer or a decimal: e.g., +2, -1.6, or +0.5.

The choice of weighting model to be applied to the data is at the discretion of the end-user.

The Healthy Days at Home Wales dataset is 'per person'. I.e., one row corresponds to one patient with their associated scores. The dataset contains a patient's geographical data such as low super output area (LSOA), registered GP practice, health board of residence and local authority.

An average Healthy Days at Home Wales score for each area can be calculated by summing the Healthy Days at Home Wales scores for all patients within that area and then dividing by the total number of patients in that area.

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## **Calculation:**

### ***Numerator***

#### **Healthy Days at Home Wales**

365 – (inpatient days + emergency department visits + mortality days + ambulance days + outpatient days)

#### **Weighted Healthy Days at Home Wales**

365 - ([inpatient days \* weight] + [emergency department days \* weight] + [mortality days \* weight] + [ambulance days \* weight] + [outpatient days \* weight])

### ***Denominator***

N/A

### ***National Weightings***

The weightings to be used with this methodology have been nationally agreed at a workshop held on 16<sup>th</sup> November 2022.

For this version, weight = 1.

### ***Local Weightings***

Weightings provide the flexibility to allow local organisations to create their own local measures for new services. These weightings are intended to be adjusted in a development environment to inform future enhancements to the measure to include further data sources.

### ***Measure version***

The intention is that the measure and associated methodology will be updated as new data sources become available. This document describes Version 2023b, which incorporates:

- inpatient days;
  - emergency department days;
  - mortality days;
  - ambulance days; and
  - outpatient days.
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### **Reporting Format / Frequency**

The intention is for this methodology to be applied to a particular ‘target year’ and reported annually. However, the same methodology could be applied to any 12-month period providing that the data for that period is complete and the analysis period is clearly stated.

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

*The following points reflect considerations raised by either the Analysis Methodologies Group or WISB in terms of aspects of the Analysis Method that require further investigation or development.*

*For a full breakdown of the issues considered, please refer to the formal WISB Outcome for this Analysis Method, which can be access via the Information Standards Assurance website:*

[Data Standards & Quality - Information Standards Assurance Submission Log - All Items \(sharepoint.com\)](#)

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

The intention is that further iterations of the development and testing process will result in refinements to the measure and associated methodology. As new data sources become available, these will be tested locally and incorporated into the measure where appropriate. Each new version of the measure will be defined in a separate Analysis Methods Notice having progressed through the information standards assurance process and approved by WISB.