NOCA National Office of Clinical Audit

NAHM National Audit of Hospital Mortality

NATIONAL AUDIT OF HOSPITAL MORTALITY
SUMMARY REPORT 2022 & 2023

The National Audit of Hospital Mortality (NAHM) monitors the outcomes of patients who are admitted to hospital for treatment in 44 participating publicly funded acute hospitals.

WHAT DOES NAHM DO?

Data are taken from information routinely collected in hospitals from in-patient medical charts. That data forms the Hospital In-patient Enquiry (HIPE) file, which is managed by the Healthcare Pricing Office (HPO), anonymised, and sent to the web-based tool called NQAIS NAHM. Hospitals nominate staff to have access to their local data via NQAIS NAHM.

The data are used to calculate a standardised mortality ratio (SMR). This ratio compares how many patients die after being admitted to the hospital to how many deaths would normally be expected, using HIPE data. The expected number of deaths is a calculation based on the patient's principal diagnosis – which is the main reason they were admitted to hospital for treatment. SMR's for every diagnosis are available to hospital staff on the NQAIS NAHM tool throughout the year. It's important to note that the reason a patient is admitted to hospital is not always their cause of death. SMR's are a way to monitor quality in hospitals. This method acts as an alert system – if the SMR is much higher or lower than expected, it alerts the hospital that a review is needed. The following factors are also considered as they are known to affect the outcomes of patients admitted to hospital for treatment:

- **AGE**
- **SEX**
- **CO-MORBIDITIES** (other existing medical conditions)
- **TYPE OF ADMISSION** (emergency or elective)
- **SOURCE OF ADMISSION** (from home, nursing home etc.)
- **NO. OF EMERGENCY ADMISSIONS TO THE SAME HOSPITAL IN LAST 12 MONTHS**
- **PROXY LEVEL OF DEPRIVATION** (medical card)
- **PALLIATIVE CARE** (receiving care and treatment for life limiting illness)

A colour-coding system helps hospitals see if the results for any diagnosis are different from what's expected. If a hospital's results are unusual, they review the data to find out why and look for areas where they can improve.

The report shows crude mortality rates over 10 years, from 2014 to 2023, for 6 key conditions. For the first time the report also includes data on all diagnoses for patients discharged from hospitals nationally during the same period.

6 6 diagnoses included - Acute myocardial infarction (AMI), heart failure, ischaemic stroke, haemorrhagic stroke, chronic obstructive pulmonary disease (COPD) and pneumonia.

44 44 hospitals from the 6 health regions contribute data to NQAIS NAHM. All hospital's data is included in the NQAIS NAHM web-based tool and monitored throughout the year. All 44 hospitals data are included in the 10-year crude mortality trend graphs.

33 33 hospitals have their data included in 2022 and 2023 SMR funnel plot graphs as they meet inclusion criteria. A funnel plot is a graphical representation of SMR's and associated control limits, which vary in range, and results in a funnel shaped graph.

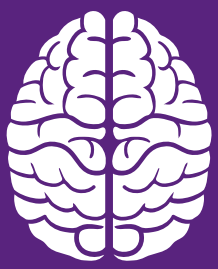
11 11 hospitals do not have data included in the SMR funnel plot graphs as they do not have high enough numbers of cases for publication in any of the diagnoses featured.

KEY FINDINGS 2022

ACUTE MYOCARDIAL INFARCTION

happens when blood flow to the heart stops or is severely restricted, often by a blood clot, causing damage to the heart muscle. It is also referred to as a heart attack.

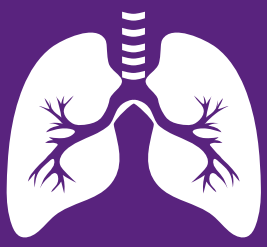
The mortality rate for AMI decreased significantly from 58 deaths per 1,000 discharges in 2014 to **47 deaths per 1,000** discharges in 2023.



ISCHAEMIC STROKE

is a clot or blockage of blood vessels in the brain.

Ischaemic stroke in-hospital mortality dropped by **42%**, which is significant, decreasing from 109 deaths per 1,000 discharges in 2014 to **63 deaths per 1,000** discharges in 2023.



CHRONIC OBSTRUCTIVE PULMONARY DISEASE (COPD)

is a chronic lung condition which makes it hard to empty air from the lungs. Common symptoms include shortness of breath and chest tightness.

The crude mortality rate for COPD was raised during the pandemic period and it has returned to pre-pandemic levels with a rate of 37 deaths per 1,000 discharges in 2014 and **38 deaths per 1,000** discharges in 2023.

ALL DIAGNOSES

Rates across all conditions in all participating hospitals

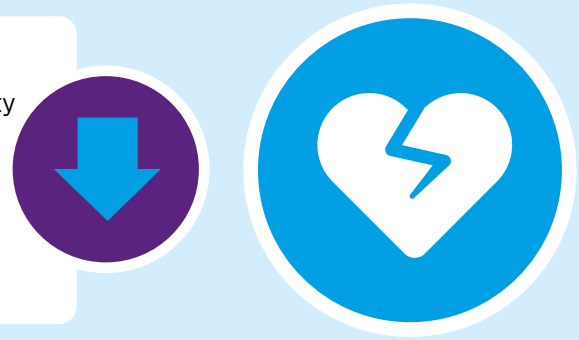
The combined in-hospital crude mortality rate for all diagnoses in 2023 has decreased significantly compared to rates in 2021 and 2022 but is still significantly higher than the pre pandemic rates.

& 2023

HEART FAILURE

is a weakening of the heart muscle which prevents the heart from effectively pumping blood around the body.

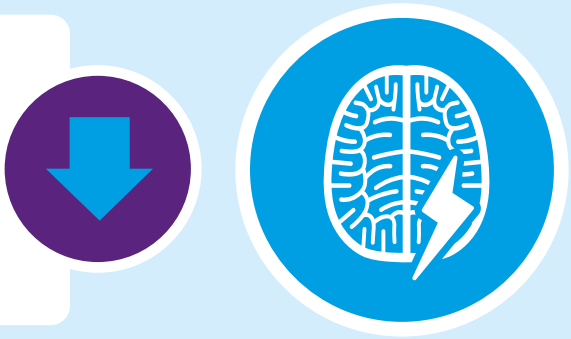
There was a significant decrease in in-hospital mortality rate for heart failure from 82 deaths per 1,000 discharges in 2014 to **72 deaths per 1,000** discharges in 2023.



HAEMORRHAGIC STROKE

is a ruptured blood vessel which leads to bleeding into the brain.

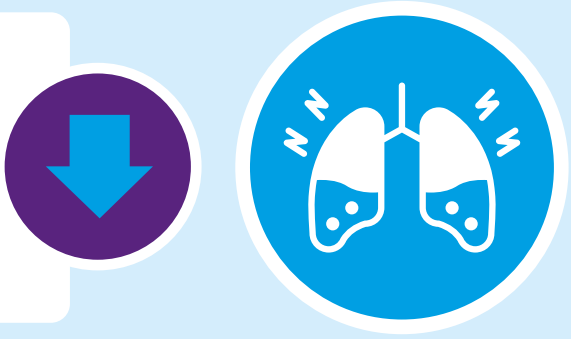
The crude mortality rate for haemorrhagic stroke has continued to decrease steadily since 2017 reducing from 335 deaths per 1,000 discharges in 2017 to **266 deaths per 1,000** discharges in 2023 which is a statistically significant change.



PNEUMONIA

is an infection of the lungs which causes the tiny air sacs to fill with fluid. Common symptoms can include a cough and difficulty breathing.

Pneumonia crude mortality rates have decreased significantly since COVID-19, going from 140 deaths per 1,000 discharges in 2021 to **100 deaths per 1,000** discharges in 2023.



EQUITY STRATIFIERS

are factors, such as age, ethnicity or where a person lives that help identify which groups may face greater challenges in achieving good health.

Data for a patient's Eircode, ethnicity, education level, or occupation is not available to NAHM so it was not possible to determine in-hospital mortality based on those points. To be able to analyse in-hospital mortality and identify if there are any health inequalities occurring, more detailed data are needed.

OUTLIERS

show if a hospital's outcomes differ from what is normally expected.

There are six hospital outlier reviews included in the report. Data quality is highlighted in all the reviews with chart documentation, palliative care and the lack of discharge summary common among them.

RECOMMENDATION

RECOMMENDATION 1 NOCA will undertake a study into in-hospital crude mortality rates in Ireland, across all conditions, and publish the findings.	
RECOMMENDATION 2 NOCA will liaise with the HPO to ensure that when equity stratifiers become available on PAS, they are exported to HIPE and onward to NOCA, in order to enable analysis of potential inequalities in the outcomes of certain groups of inpatients to be carried out.	
RECOMMENDATION 3 NOCA will work with the HPO to gather data to enable geocoding, which involves converting addresses or locations into geographic coordinates to generate small area deprivation codes that reflect levels of poverty or disadvantage in specific areas. These area codes will be used in NAHM analysis to explore how living in different areas impacts in-hospital mortality.	
RECOMMENDATION 4 Each hospital should set up a working group including clinicians and HIPE coders, to promote collaboration between them and to check medical charts on a regular basis for correct documentation and HIPE coding. This is essential for maintaining precise patient records and ensuring reliable data analysis.	
RECOMMENDATION 5 A discharge summary for deceased patients should be designed and added to the medical chart as a standard document, to be completed for all patients who die as an inpatient in the hospital. It should include all the necessary details to ensure proper coding of relevant data. This will be conducted on a trial basis in Cork University Hospital for a six-month period.	

POINTS FOR CONSIDERATION/LEARNING

Hospital's patient administration systems (PAS), which is used to record the basic non-clinical patient details, such as name, date of birth, and home address, should continue to be expanded as more data points relating to equity of patients are made available.

PATIENT AND PUBLIC INTEREST

As someone who appreciates audit as a tool, I was pleased to put my name forward as a patient representative with NOCA for the National Audit of Hospital Mortality. We expect deaths in hospitals but we also view hospital care as our best chance of survival, so the trends observed through audit give vital information which, if acted upon, prompt improvement actions to deliver our best outcomes. It's heartening to see decreases in hospital mortality in the six conditions included in the report.

One line of the summary report caught my attention "The main reason a patient is admitted to hospital is not always their cause of death". It is worth noting that while NAHM only publishes data on six conditions, that all hospital deaths and conditions are monitored by hospital personnel using the NAHM online tool. It would be hoped in the future that a lot more data is accessible, perhaps through the IHI when it is available, which can provide links to other important data, for example cause of death.

I welcome the inclusion of the recommendation to have a template for a discharge summary for deceased patients so that accurate information can be passed on to the GP in a timely manner which will also benefit the patient's families.

Bernie O'Reilly, Patient and Public Interest Representative, NAHM Committee

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