NOCA National Office of Clinical Audit

NAHM National Audit of Hospital Mortality

NATIONAL AUDIT OF HOSPITAL MORTALITY
SUMMARY REPORT 2020

This is the sixth Summary Report for the National Audit of Hospital Mortality (NAHM). NAHM monitors the outcomes of patients admitted to hospital for treatment in 44 participating acute hospitals. The data used are extracted from information routinely collected from medical charts of patients who are admitted to hospital for treatment. The data are managed by the Healthcare Pricing Office and coded by trained coders in each hospital and sent to the HSE to be applied to the web-based tool, NQAIS NAHM. Each of the 44 hospitals can view their data using the web-based tool all year round, not just for the annual report, and for all conditions patients may have, not just the six we focus on for the annual report. Hospital's data cannot be compared to each other, they are compared to the national average for a condition. Hospitals can produce reports from the web-based tool for presentation to hospital management.

WHAT IS AN SMR?

The standardised mortality ratio (SMR) is the ratio of patients who die after being admitted to hospital, versus the number expected to die. The expected number of deaths is a calculation based on the patient's principal diagnosis – what is found to be the main reason for admission to hospital for treatment. COVID-19 is a disease which affects people in different ways. Most patients who need to be admitted to hospital as a result of COVID-19 have a respiratory condition and that condition is the principal diagnosis, not COVID-19. COVID-19 is a secondary diagnosis and is not included in the risk calculations for the SMR or expected deaths.

The following factors are also taken into account as they are known to impact on in-hospital mortality:

- **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 threatening illness)

The main reason a patient is admitted to hospital is not always their cause of death. SMR's are an indicator of quality in hospitals. This method acts as an alert system – if the SMR is unexpectedly high or low, it alerts the hospital to the fact that further review is necessary.

44

Forty Four acute hospitals from the seven hospital groups contribute data to the NAHM audit.

14

Fourteen hospitals' data did not meet the inclusion criteria for publication on any of the six key diagnosis reported, but are monitored in the same way.

30

Thirty hospitals have met the inclusion criteria to have their data included in the 2020 report.

WHAT DIAGNOSES ARE INCLUDED IN **THE NAHM ANNUAL REPORT 2020?**

There are six key diagnoses: acute myocardial infarction (AMI), heart failure, ischaemic stroke, haemorrhagic stroke, chronic obstructive pulmonary disease (COPD) and pneumonia. A "COVID-19 flag" was added to NQAIS NAHM to allow users to view which cases had tested positive for COVID-19 or were being treated for COVID-19 during that admission to hospital. This extra information helps hospitals to analyse the data.

	ACUTE MYOCARDIAL INFARCTION	HEART FAILURE	ISCHAEMIC STROKE	HAEMORRHAGIC STROKE	CHRONIC OBSTRUCTIVE PULMONARY DISEASE	PNEUMONIA	
	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.	is a weakening of the heart muscle which prevents the heart from effectively pumping blood around the body.	is a clot or blockage of blood vessels in the brain.	is a ruptured blood vessel which leads to bleeding into the brain.	is a chronic lung condition which makes it hard to empty air from the lungs. Common symptoms include shortness of breath and chest tightness.	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.	
CRUDE MORTALITY RATES	The crude mortality rate increased slightly to 49 deaths per 1,000 admissions in 2020 from 47 deaths per 1,000 admissions in 2019.	Heart failure in-hospital mortality decreased significantly (22%) over the past 10 years, from 81 deaths per 1,000 admissions in 2011 to 63 deaths per 1,000 admissions in 2020.	There was a significant reduction (42%) in ischaemic stroke in-hospital crude mortality between 2011 and 2020 from 123 deaths per 1,000 admissions in 2011 to 71 deaths per 1,000 admissions in 2020.	In-hospital crude mortality due to haemorrhagic stroke reduced by 21% over the past 10 years, from 355 deaths per 1,000 admissions in 2011 to 280 deaths per 1,000 admissions in 2020.	The COPD crude mortality rate has increased slightly in 2020 with 38 in-hospital deaths per 1,000 admissions compared with the 37 in-hospital deaths per 1,000 admissions in 2019.	There has been a significant increase in the crude mortality rate for pneumonia from 103 deaths per 1,000 admissions reported in 2019 to 131 deaths per 1,000 admissions in 2020.	**CRUDE MORTALITY RATES**
	INCREASE FROM 2019	DECREASE FROM 2019	DECREASE FROM 2019	DECREASE FROM 2019	INCREASE FROM 2019	INCREASE FROM 2019	
% OF CASES WITH COVID-19 FLAG	Lesss than one per cent of cases **(0.6%)** had a confirmed COVID-19 flag on NAHM.	Just under one per cent of heart failure cases **(0.9%)** had a COVID-19 flag.	**1.3%** of ischaemic stroke cases had a COVID-19 flag.	The COVID-19 flag was present in **0.8%** of haemorrhagic stroke cases.	The COVID-19 flag was present in **1.5%** of the COPD cases in 2020.	The COVID-19 flag was present on **19.4%** of pneumonia cases in 2020.	**% OF CASES WITH COVID-19 FLAG**
% OF CASES NATIONALLY	These publicly reported cases account for **93%** of cases admitted with a principal diagnosis of AMI in 2020.	These cases account for **91%** of patients admitted with a principal diagnosis of heart failure nationally in 2020.	This data accounts for **86%** of patients admitted with a principal diagnosis of ischaemic stroke in 2020.	The cases in this report account for **57%** of patients nationally admitted with a principal diagnosis of haemorrhagic stroke between 2018 and 2020	These cases account for **95%** of patients admitted with a principal diagnosis of COPD in 2020.	The cases in this report account for **97%** of patients admitted with a principal diagnosis of pneumonia nationally in 2020.	**% OF CASES NATIONALLY**
ADMISSIONS DURING 2020	There was a reduction of **4.5%** in the number of cases admitted with AMI since 2019.	There were a similar number of admissions in 2020 compared to 2019.	In 2020, there were **5,135** (compared with 4,809 in 2019) cases admitted with a principal diagnosis of ischaemic stroke.	In 2020, there were **960** (compared with 941 in 2019) cases admitted with a principal diagnosis of haemorrhagic stroke	The number of patients admitted with COPD as a principal diagnosis in 2020 was **11,570** compared with 16,184 in 2019. This represents a decrease of 29%.	The number of patients admitted with pneumonia as a principal diagnosis in 2020 was **12,603** compared with 14,066 in 2019.	**ADMISSIONS DURING 2020**

OUTLIERS

There were no outliers in the year end closed national HIPE file data for January 2020 to December 2020. In March 2020, monitoring and escalation of outliers in NQAIS NAHM was paused due to the possible underestimation of risk of death in cases with confirmed COVID-19 infection. Therefore there are no outlier reviews in the main report.

FINDINGS

ONGOING WORK

In the 2019 report, NAHM undertook an exercise to look at data for the hospitals not meeting the inclusion criteria for the report due to small numbers of cases. These data were looked at in more detail to ensure there were no outliers and they have been confirmed to be performing as expected. This work has been completed. Hospitals which do not have data included in the published report have been highlighted on the hospitals map in the in the introduction of the main report.

Work is underway to develop guidance for wording in medical records to show when palliative care treatment is provided to a patient. This work was delayed in 2020 and 2021, due initially to COVID-19, and then more recently because of the HSE cyberattack in May 2021. Work has commenced and it is expected to be completed in early 2022.

The NOCA Governance Board requested an independent review of NAHM to examine international approaches to in-hospital mortality, the risk models used and the approach to reporting on mortality. This work is underway with a lead external reviewer and supporting researcher. The results of this review will be published in later reports.

OUTLIERS

There was a pause on release of data to the NQAIS NAHM web-based tool due to the high risk for cases with confirmed COVID-19 and NAHM's inability to include that risk in the model, therefore there were no outliers identified during 2020. Data were released to the tool for the year end closed 2020 HIPE file and there were no outliers in the data.

PUBLIC AND PATIENT INTEREST

"The COVID Pandemic and associated restrictions had a major impact on the way we all do business. Due to factors outside of our control some delays were experienced. It is a tribute to the efforts of all concerned that NAHM managed to meet most targets under these difficult conditions".

Alan Egan. Patient and Public Interest Representative, NAHM Governance Committee

THE NATIONAL AUDIT OF HOSPITAL MORTALITY ANNUAL REPORT 2020
AND NATIONAL AUDIT OF HOSPITAL MORTALITY SUPPORTING APPENDIX 2020
ARE AVAILABLE TO DOWNLOAD FROM THE NOCA WEBSITE AT www.noca.ie

NOCA National Office of Clinical Audit

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2ND FLOOR, BLOCK B, ARDILAUN HOUSE,
111 ST STEPHENS GREEN, DUBLIN 2.
Tel: +353 1 402 8577

IF YOU HAVE ANY QUERIES OR COMMENTS
PLEASE FEEL FREE TO EMAIL
nahm@noca.ie

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@noca_irl