National Respiratory Audit Programme (NRAP)

Organisational audit report 2024 – methodology

Version 1.0 – November 2024

Methodology of the organisational audit

Overview

NRAP, which was commissioned from 1 June 2023, continues the work produced by the National Asthma and COPD Audit Programme (NACAP). NRAP collects healthcare data from four individual audits covering the following workstreams – COPD, adult asthma, children and young people's asthma and pulmonary rehabilitation.

This is the first combined organisational report produced by NRAP. It presents information on the resourcing and organisation of asthma and COPD care in hospitals, and PR services in England and Wales. The data collection for the audit ran from 26 February to 29 March 2024. The audit collected cohort data from 1 April 2022 to 31 March 2023 for admissions information, and where static data snapshots were required, for example number of beds, this was taken from September 2023. Staffing information was a contemporaneous snapshot of the data from early 2024. The summary report, presenting key findings and recommendations, can be found at https://www.rcp.ac.uk/42504.

Audit participation

As audit completion took place via the NRAP audit web tool, where patient data is inputted into the clinical audits, only the hospitals/PR services in England and Wales that were registered at the time of data collection were eligible to participate in the organisational audit. A full list of participating, partially participating and non-participating hospitals/PR services is provided within the full data and the benchmarked key performance indicator files.

Children and young people asthma organisational audit

129/168 (76.8%) hospitals provided a full organisational audit record. A further 9 hospitals (5.4%) provided a partially complete organisational audit record but were not included in the final analysis.

Adult asthma and COPD organisational audit

136/192 (70.8%) hospitals provided a full organisational audit record. A further 26 hospitals (13.5%) provided a partially complete organisational audit record but were not included in the final analysis.

Pulmonary rehabilitation (PR) organisational audit

160/187 (85.6%) services provided a full organisational audit record. A further 2 services (1.1%) provided a partially complete organisational audit record but were not included in the final analysis.

Audit question development

To complete the combined organisational audit report 2024, three individual workstream datasets were developed and launched: CYP asthma, adult asthma and COPD, and a PR organisational audit dataset. As a starting point for the 2024 report, the previous organisational audit datasets were used. The audit datasets were developed in autumn 2023 by the NRAP team and workstream clinical lead. Consultation with the NRAP advisory groups was held in October/November 2023. Following further review and incorporation/improvement of questions, the datasets were circulated to all members of the NRAP board for comment. Final amendments to the datasets were made following return of feedback.

The final datasets were sent to Crown Informatics, who host the NRAP web tool, to develop an online organisational audit portal where the data could be entered by hospital/PR service teams and extracted by the NRAP team for analysis.

Data entry

Hospitals were required to enter their hospital-level information via the audit programme's bespoke web tool, created by Crown Informatics Ltd. Guidance document to support participation in the audit, such as the dataset with help notes, audit technical guidance and FAQs were available to download from both the web tool and the NRAP resources webpage.

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Data entry to the audit was regularly reviewed by the NRAP team. Reminders about the audit data entry deadline, tailored to hospitals/services with different completion level rates, were sent to registered teams to support completion of the organisational audit dataset. The NRAP team also sent bespoke emails to hospitals to highlight which specific questions remained blank within their dataset. Participating hospitals were also able to contact the NRAP helpdesk via email or phone directly, which operates 9am–5pm every working day, with any queries about the organisational audit.

Analysis methodology

Deadline and data transfer

The data entry deadline for completion of the organisational audit dataset was 6pm on 29 March 2024. Thereafter, the data were extracted by the NRAP team at the RCP and sent directly to Imperial College London for analysis.

Data cleaning and analysis

These data were analysed at Imperial College London using R version 4.3.1. Hospitals that did not did consent to take part were removed, along with those who did not submit complete data (other than in the COPD and adult asthma and CYP asthma organisational audits where hospitals that had a specific issue with obtaining asthma and COPD coded emergency ward data were kept in the dataset and excluded from the analysis around that particular data element only). Duplicate entries were also removed. After the final cleaned sample was arrived at, semi-colon separated list variables were separated into their constituent parts, and rate variables were created by dividing the measure of interest (such as WTE, number of respiratory beds etc) by the appropriate denominator (such as respiratory admissions). An issue was found with the respiratory support unit question in the COPD and adult asthma organisational audit, and so a hospital was assumed to only have a respiratory support unit if they stated that their respiratory support unit had a non-zero number of beds. Proportions and medians with IQRs were calculated at a national, country, and organisational level and outputted into a csv file. Full data cleaning and analysis details can be found at the Github link here:

https://github.com/NationalAsthmaCOPDAudit/2022-23_Organisational_audit_COPD_AA_CYPA_PR.

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