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**Proceedings Paper:**

Dondo, TB, Hall, M [orcid.org/0000-0003-1246-2627](https://orcid.org/0000-0003-1246-2627), Timmis, AD et al. (9 more authors) (2016) Geographic variation in the treatment of non ST-segment elevation myocardial infarction: a national cohort study. In: European Heart Journal. European Society of Cardiology Congress 2016, 27-31 Aug 2016, Rome, Italy. Oxford University Press , pp. 1177-1178.

<https://doi.org/10.1093/eurheartj/ehw434>

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**Title:** Geographic variation in the treatment of non ST-segment elevation myocardial infarction: a national cohort study.

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**Background:** Between country investigations suggest variation in guideline-indicated treatment and outcomes for non ST-segment elevation myocardial infarction (NSTEMI). Yet, little is known about within country variation in NSTEMI care.

**Purpose:** To investigate within country variation in provision of guideline-indicated treatments for NSTEMI.

**Methods:** National cohort study (232 hospitals, 357,228 NSTEMI in England, 2003-13) using data from the Myocardial Ischaemia National Audit Project (MINAP). We used a four level hierarchical Poisson model adjusted for patient baseline characteristics to quantify variation amongst Clinical Commissioning Group, CCG (n= 211) in the provision of ESC guideline-indicated treatments according to their date of publication.

**Results:** The proportion of NSTEMI who received all care opportunities for which they were eligible was low (13.5% (48,257)) and varied between CCGs (median 12.8%, IQR 0.7 to 18.1%) (Figure 1). The greatest variation was for provision of aldosterone antagonists (16.7%, 0.0 to 40.0%) and least for use of an ECG (96.7%, 92.5 to 98.7%). The highest rates of care were for acute aspirin (median 92.8%, IQR 88.6 to 97.1%), as well as aspirin (90.1%, 85.1 to 93.3%) and statins (86.4%, 82.3 to 91.2%) at hospital discharge. The lowest rates were for smoking cessation advice (median 11.6%, IQR 8.7 to 16.6%), dietary advice (32.4%, 23.9 to 41.7%) and the prescription of P2Y12 inhibitors (39.7%, 32.4 to 46.9%). After adjustment for case mix, nearly all (99.6%) of the remaining variation in provision of care was due to between hospitals differences (median 64.7%, IQR 57.4% to 70.0%; between hospital variance: 1.92, 95% confidence interval 1.51 to 2.44; ICC 0.996, 0.976 to 0.999).

**Conclusions:** Despite international recommendation for the management of NSTEMI, there is evidence for wide within country variation in the use of guideline-indicated treatments for NSTEMI. Improved adherence to guidelines will help reduce premature cardiovascular death across Europe.