

# Sedation during transfer: A region-wide survey

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## Rationale

Patients are routinely muscle relaxed for intra- and inter-hospital transfer, and anaesthesia maintained with intravenous agents. Episodes of reported awareness under general anaesthesia (AAGA) are not uncommon during transfer and can have serious psychological consequences, especially for patients recovering from critical illness, and contribute to critical care delirium.

NAP 5's risk factors for AAGA include: total intravenous anaesthesia (TIVA), use of neuromuscular blockade, critical illness (highlighting risks with low-dose propofol infusions), and cardiac patients (which are regularly transferred in EMCCN).

We aimed to better understand the approaches taken for sedation on transfer across the East Midlands region.

## Methods

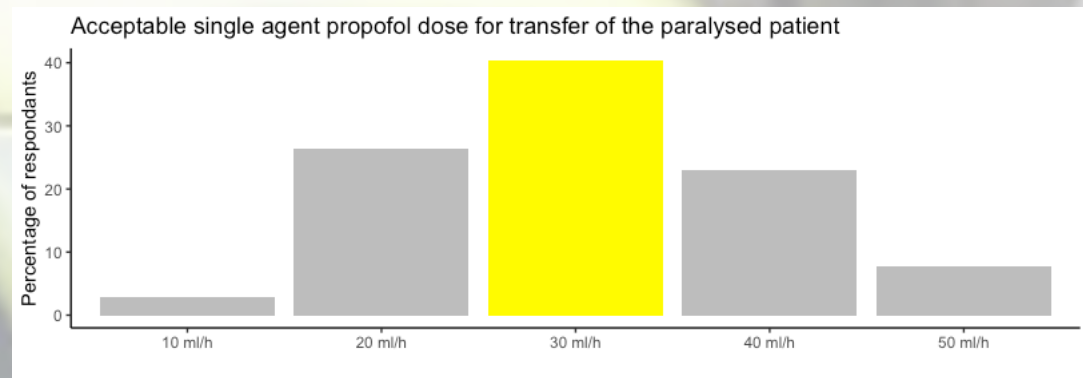
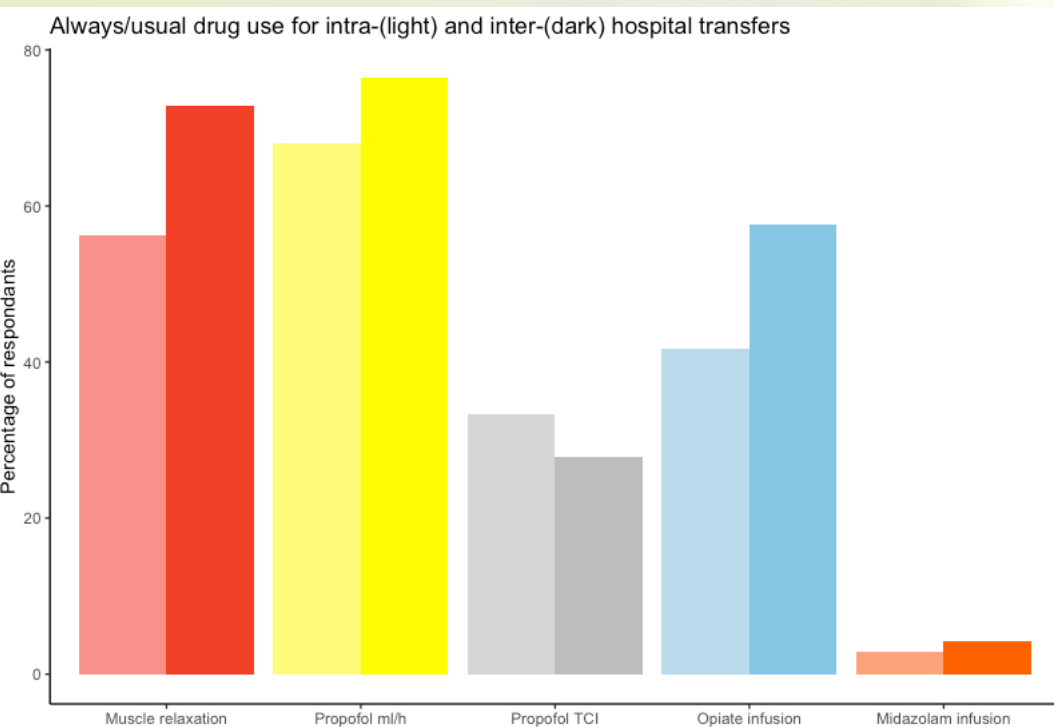
MERCAT, the local trainee-lead research and audit group, disseminated an online questionnaire to all anaesthetics and intensive care departments in the East Midlands School of Anaesthesia. Respondents were asked about their sedation practices, experience of consequences of inappropriate sedation dosing, and use of equipment such as target controlled infusions (TCI) and depth of anaesthesia (DOA) monitoring on transfer.

## Results

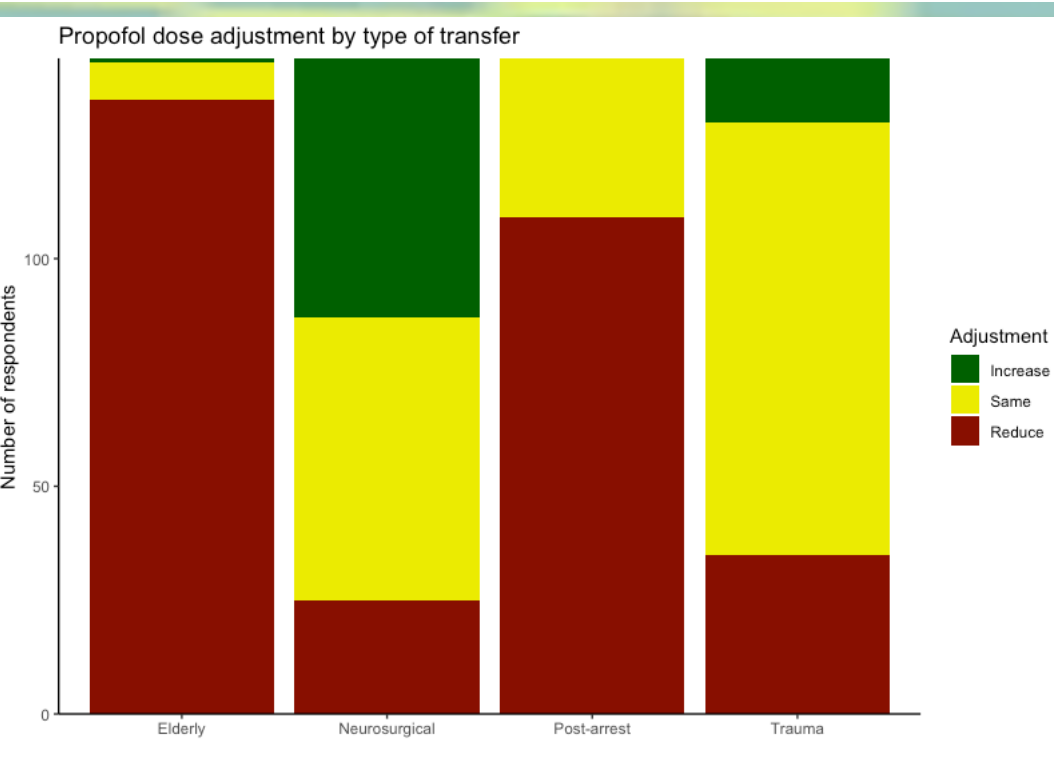
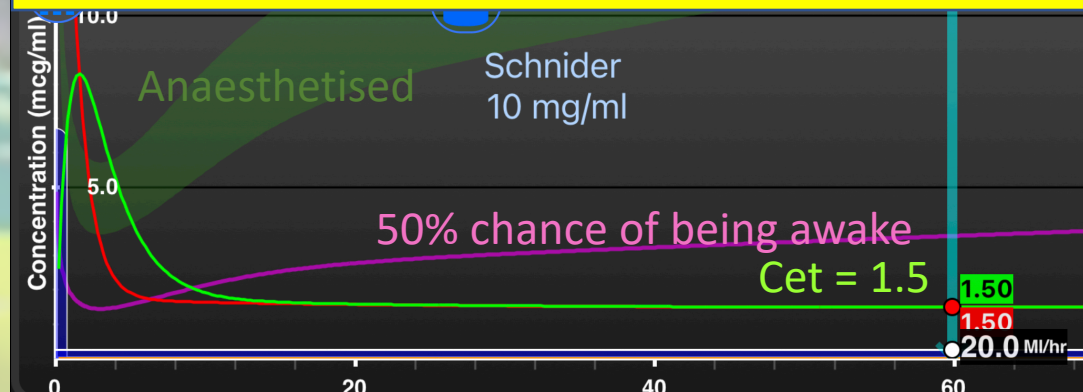
144 responses were gained from across all hospitals except Kettering. The bulk of respondents were consultants (52%) and registrars (40%).

73% of respondents reported always or usually using muscle relaxation for interhospital transfer, and the majority (76%) used propofol infusions for sedation, with only 28% always or usually using TCI infusions.

20ml/h or less was felt an acceptable dose of propofol during transfer of the paralysed patient by 69% of respondents, and dose adjustment in various clinical scenarios lacked consensus. Correlation by clinicians between propofol dose and expected TCI concentration was poor.



Simulated  $c_{et}$  at 1h in a 70kg, 40 year old male is **below** awakening level (induction with 2mg/kg propofol, 1mg alfentanil, followed by 20ml/h propofol infusion) (Tivatrainex)



23% of respondents had witnessed adverse incidents due to inadequate sedation during transfer, with 6% having been involved with cases of reported awareness during transfer.

78% use or would like to use TCI, and 44% DOA monitoring.

Barriers to use of TCI/DOA monitoring included: Availability of TCI pumps (82%) and DOA monitoring (75%); a lack of understanding of its use among ODAs/Nurses (31%) and doctors (14%); the potential for sedation-related hypotension (29%); and concerns regarding the validity of TCI models/DOA in sick patients, movement artifacts affecting DOA interpretation, and lack of opiate availability in ED.

## Conclusions

TIVA is still TIVA, even in the back of an ambulance or in CT scan, and should be held to the same standard of care.

20ml/h propofol is in widespread use for transfer, but is probably not an acceptable anaesthetic regime without supplementary monitoring NAP 5 recommends the use of DOA monitoring to prevent AAGA, but there are concerns about their usability in transfer and applicability in the critically unwell, some of which are likely unfounded.

There remains significant educational, technical, financial, and governance challenges to improving practice.