

Background:

Analgesia and sedation are key elements of the care delivered by HEMS teams across the country. Adequate analgesia is important on humanitarian grounds, facilitates fracture reduction and may reduce blood loss. In circumstances such as entrapment, the use of analgesia and sedation may facilitate extrication and reduce time to definitive care.<sup>1</sup>

Primary Aim:

Compliance of monitoring during procedural sedation with relevant guidelines (ECG, NIBP, SO<sub>2</sub>, ETCO<sub>2</sub>)

Secondary Aim:

Note any complications of sedation (Hypotension, Hypoxia, Bradycardia, CPR/ALS, Airway compromise, unplanned intubation)

Methods:

Retrospective database review using HEMSBASE of all procedural sedation using Ketamine and/or Midazolam from 01/01/2016 till 31/12/2016.

Patients receiving these drugs as part of an RSI drug regimen, maintenance of anaesthesia or seizures were excluded.

Previous results:

	First cycle	Second cycle
Time frame	11/2009- 11/2013	1/11/2013- 4/6/2015
Primary objective	Monitoring during use of Ketamine for procedural sedation	Monitoring during use of Ketamine & Midazolam for procedural sedation
Results	Full monitoring applied 59/ 212 patients (27.8%)	Full monitoring applied 83/146 patients (56.8%)
Recommendations	Sedation sticker Re- audit in 12 months	KPI stickers/sedation checklist 'Sedation treatment modality' added onto HEMSBASE

Results of 2016 audit cycle :

141 patients met inclusion criteria in the 12 month period. Complete observations were applied in 127 (90%) of patients.

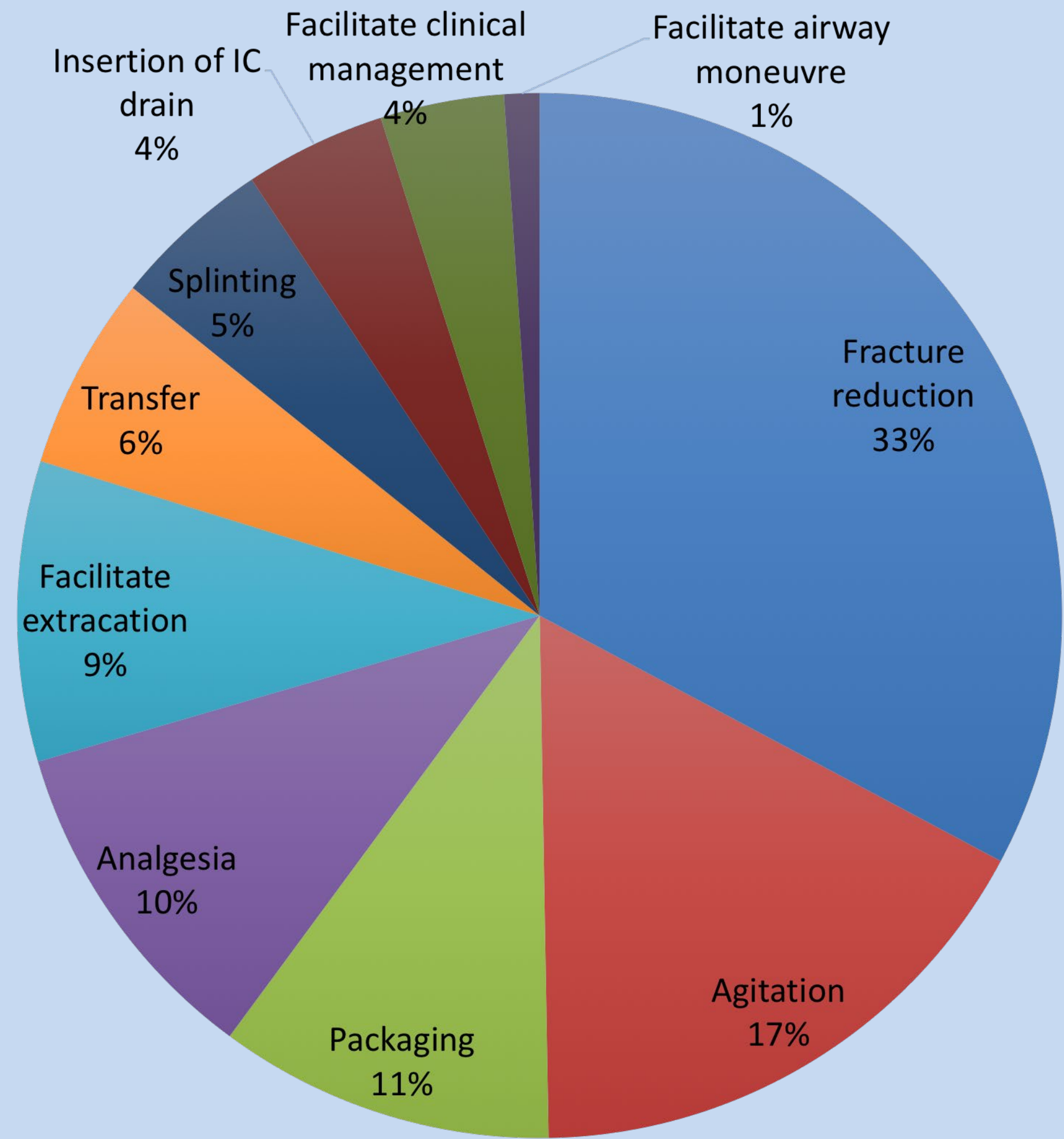
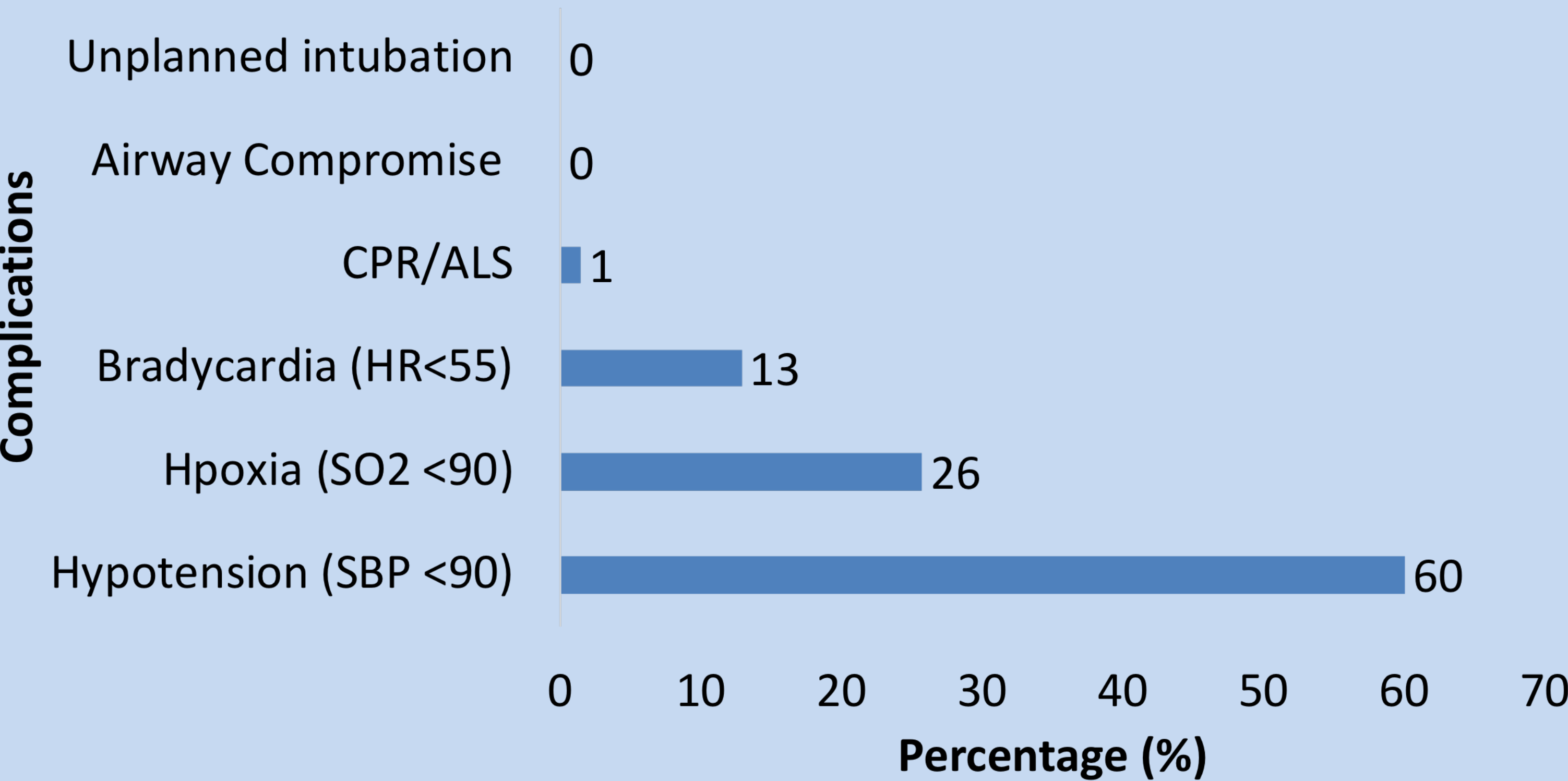


Figure 1: Indications for sedation

Complications of sedation:

51(36%) patients: at least one complication  
15 (11%) patients: more than one complication



Conclusion & reccomendations :

There has been a marked improvement in monitoring patients undergoing procedural sedation from previous audit cycles 27.8% → 56.8% → 90%.

To improve this further, a flagging system could be incorporated into HEMSBASE to alert clinicians to incomplete or abnormal observations.

Finally, a number of clinicians felt it would be valuable to conduct a patient survey assessing the quality & depth of sedation being administered to patients. This avenue is currently being explored however, it poses challenges- namely around confidentiality & use of patient data.

**References:**

1. Bredmose PP, Lockey DJ, Grier G, et al Pre-hospital use of ketamine for analgesia and procedural sedation Emergency Medicine Journal 2009;26:62-64.
2. Lockey, D. J., Crewdson, K., Davies, G., Jenkins, B., Klein, J., Laird, C., Mahoney, P. F., Nolan, J., Pountney, A., Shinde, S., Tighe, S., Russell, M. Q., Price, J. and Wright, C. (2017), AAGBI: Safer pre-hospital anaesthesia 2017. Anaesthesia, 72: 379–390. doi:10.1111/anae.13779
3. Chesters A, Webb T. Ketamine for procedural sedation by a doctor-paramedic prehospital care team. European Journal of Emergency Medicine. 2015;22(6):401-406.