Case report: keeping patients awake and safe for cataract surgery
A sustainable healthcare initiative

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Background:

- Approximately 85% eye surgery cases are carried out under local anaesthetic (LA) alone, the remainder are carried out using intravenous (IV) sedation or a general anaesthetic (GA).
- Most weeks a small number of cases were being converted from GA to IV sedation or LA alone.
- The late conversion led to waste of resources, a negative environmental impact, and poorer patient experience due to unnecessary visits to hospital for investigations and pre-op assessment, un-addressed patient anxiety, delayed listing for surgery and the effects/risks of GA.
- Late conversion may be the tip of the iceberg; there may be more inappropriate GA listings that are not converted.
- Causes of the inappropriate listings included:
    - misconceptions amongst surgeons of the indications for GA.
    - lack of knowledge amongst surgeons of techniques that anaesthetists could use to make surgery possible under local anaesthetic.
    - surgeons not considering the risks of GA in a frail, elderly population.
    - the consent process in clinic, including how options were presented and lack of exploration of patient concerns/anxieties.

Approach:

- The project was run over 6 weeks.
- To avoid the unnecessary use of GA or IV sedation, all clinical staff were encouraged to ask 'Why GA' at 3 crucial stages in the patient's cataract surgery pathway: 1) before proceeding with a general anaesthetic (GA) or intravenous (IV) sedation, 2) during informed consent, 3) at pre-assessment & during re-consent on the day of surgery.

- The clinicians were asked to improve the quality of engagement with the patient during consent conversations & to spend some time discussing all anaesthetic options and their relative risks with the patient.
- The Trust cataract surgery patient information leaflet was updated to include guidance about anaesthesia
- Teaching sessions were scheduled to increase the understanding of anaesthetic risks in patients undergoing eye surgery.

Outcome measures used:
- number of conversions from GA to LA (with or without sedation) on the day of surgery.
- Relative financial cost procedure with GA or LA (with or without sedation). This included cost of additional equipment used during a GA or IV sedation compared to LA, cost of disposal of single use equipment, reduced need for anaesthetic staff, avoiding additional investigations & pre-assessment visits and improved flow through theatres.
- Relative carbon footprint of procedure under GA and LA (with or without sedation).

Results:
Over 6 weeks, 9 cases were converted at a late stage from GA to LA (with or without sedation). The approach outlined above was implemented.

Environmental benefit	Potential to save **1910 kgCO2e** annually due to reduced use of equipment and anaesthetic gases. When the changes made are sustained and patients are not unnecessarily listed for a GA then there will be a further saving of at least 1 hospital visit for pre-operative assessment/further investigations. This would be a further saving of 1,794 kgCO2e every year.
Social sustainability; benefit to patients, staff and community	Patients: potential (not measured) to improve waiting times as more patients will be able to be added to each list, fewer disruptive visits to hospital for pre-operative assessments, able to leave hospital earlier as no time needed in recovery after GA. Staff: different members of MDT (nurses, anaesthetists, surgeons) working together to reduce GA (improved team working and understanding of each other's roles and concerns about patient care), more thoughtful approach to practice encouraged in team.
Financial benefit	For each case converted £24 of extra equipment and the sessional cost for the anaesthetist (£500/session) was saved. This is a total of **£4,716 over 6 weeks**, equating to **£40,872 over 1 year**. Once the new patient information leaflets, education, use of the 3 'whys' and improved consent conversations have effect and patients are not inappropriately being listed for a GA in the first place then there is the potential for the following further savings due to; 2 more cases could be added to a list (loss of tariff of 2 x £700 when a GA case is listed), and there would be a saving at least 1 additional pre-op investigation/assessment (£150). So, each case under GA costs an additional £2,074. If these patients were not listed for GA inappropriately then the saving would be £18,666 over 6 weeks, **£161,772 over 1 year.**
Clinical outcomes	Reduction in patients exposed to risk of GA, potential to improve waiting times, improved information offered to patients in leaflet form, which may reduce anxiety.

This project was developed in partnership with the Centre for Sustainable Healthcare through its Green Ward Competition programme - https://sustainablehealthcare.org.uk/green-ward-competition