Safety and feasibility of same-day discharge following lumbar decompression surgery: a systematic review protocol

Version 2.0

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2 Background

Same-day discharge (SDD) is a modern model of care that allows patients to be discharged on the day of surgery, providing pre-defined postoperative stabilisation criteria have been met. SDD is becoming an increasingly popular concept in developed countries where there are growing waiting lists and ever-increasing pressures on health care resources. Sweden, a high-income country, is example of where SDD has been embraced, with over half of all surgical procedures being in an outpatient setting between 2006 and 2013\(^1\).

Lumbar decompression (LD) surgery has traditionally been performed as an inpatient procedure in an attempt to mitigate risks of perioperative morbidity, limited mobility, pain-control issues and to allow extended neurological observations. There is, however, an increasing trend towards SDD in appropriately selected patients following routine elective LD surgery. The 2019 GIRFT report into spinal services specifically recommended considering early discharge following routine spinal surgery where possible (recommendation #15)\(^2\).
3 Aims

Primary aim:

- To assess the safety of same-day discharge following lumbar decompression surgery

Secondary aims:

- To examine patient and surgical factors that may influence the safety and feasibility of same-day discharge
- To examine acceptability of same-day discharge following lumbar decompression amongst patients
- To examine the economic and financial impact of same-day discharge following lumbar decompression

The aims will be addressed using the following comparison:

Same-day discharge following lumbar decompression with inpatient stay following lumbar decompression (defined as one or more nights stay postoperatively)
4 Study criteria

4.1 Inclusion criteria

Studies which meet the following inclusion criteria will be included in the review:

- Human Studies
- English language
- Full text available
- Adult patients
- Lumbar decompression surgery is the primary focus of the paper
- Same-day discharge is a focus of the paper
- Research which discusses outcomes of same-day discharge

4.2 Exclusion criteria

Studies which meet the following criteria will be excluded from the review:

- Case reports
- Cases involving instrumented fixation/fusion
5 Search strategy

5.1 Electronic databases

The following electronic databases will be searched:

- PubMed
- EMBASE
- Cochrane Central Register of Controlled Trials

5.2 Alternate sources

Alternate sources to be searched include:

- ClinicalTrials.gov
- Reference searching of all papers reviewed
  - Both forward and backward citation tracking

5.3 Grey literature

In an attempt to minimise bias, a search of the existing grey literature will also be performed of the following sources:

- ProQuest Dissertations and Theses
- OVID HMIC (Health Care Management Information Consortium) (DoH)
6 Review methods

6.1 Screening

Two reviewers (EG and MS) will screen titles and abstracts for inclusion independently using the predefined inclusion/exclusion criteria listed in section 4.1, in adherence to the 2020 PRISMA guidelines and predefined flow chart (Appendix 1). This flowchart will subsequently be populated and included as a figure in the review. Full text copies of all potentially eligible papers will be retrieved and reviewed. Where there is any uncertainty over whether or not a paper is eligible for inclusion, reviewers will discuss the papers and where possible resolve by consensus after referring to the protocol. When the reviewers are unable to decide between them, a third independent reviewer (MI) will be consulted. Any disagreements and their resolution will be recorded.

6.2 Data extraction

Data will be extracted and stored on Microsoft Excel. Data extraction will be based on the generic EPOC data collection template, modified to capture more detail in some areas. For all dichotomous outcomes, we will record the numbers in each of the two categories (event/no event) in each of the intervention groups. For continuous outcomes, we will record the mean values of the outcomes, the standard deviations of the outcomes, and the number of cases on whom the outcome was assessed in each of the two groups.

6.3 Quality assessment

Risk of bias will be assessed using the Newcastle-Ottawa Scale\textsuperscript{3} for non-randomised studies including cohort and case-control studies. For cases of randomised control studies, the Cochrane Risk of Bias 2\textsuperscript{4} tool will be used to assess the risk of bias.

All studies will be independently assessed for risk of bias by EG. The review will document and present the results of bias assessment for each study in the results section.
6.4 Data synthesis

For each study included, we will report the results in natural units in the main results table. The following data will be included in the results table:

- Author names
- Year of study
- Country of study
- Study design
- Level of evidence – as per the Oxford Centre for Evidence-based Medicine (CEBM) Criteria\(^5\)
- Number of cases
- Risk of bias
- Primary conclusion
- Post-operative complication rates of same-day discharge cohort
- Post-operative complication rates of inpatient stay cohort
- Readmission rates of same-day cohort
- Re-admission rates of inpatient stay cohort
- Patient satisfaction
- Economic impact of same-day cohort
- Economic impact of inpatient stay cohort

In order for a meta-analysis to be justified, a high level of homogeneity must be demonstrated across study design, patient cohort, surgical intervention/technique and outcome measures. Each study will be weighted according to its sample size. For dichotomous data, a meta-analysis will be performed using risk ratios. For continuous data, standardised differences in means will be calculated.
If a high level of heterogeneity amongst studies is observed, a meta-analysis will not be performed and a descriptive, qualitative analysis will be performed and presented.

In an attempt to minimise heterogeneity and standardise reporting, complications will be classified according to their severity by the Spinal Adverse Events Severity System, version 2 (SAVES-V2) (graded 1 - 6, with 1 being an adverse event that does not require treatment & has no adverse effect and 6 being an adverse event resulting in death)\(^6\).

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8 References


Appendix 1

PRISMA 2020 flow diagram for new systematic reviews which included searches of databases, registers and other sources

Identification of studies via databases and registers

Records identified from:
- Databases (n = )
- Registers (n = )

Records removed before screening:
- Duplicate records removed (n = )
- Records marked as ineligible by automation tools (n = )
- Records removed for other reasons (n = )

Records screened (n = )

Reports sought for retrieval (n = )

Reports assessed for eligibility (n = )

Studies included in review (n = )

Records identified from:
- Websites (n = )
- Organisations (n = )
- Citation searching (n = )

Identification of studies via other methods

Records excluded**
(n = )

Reports not retrieved (n = )

Reports assessed for eligibility (n = )

Reports excluded:
- Reason 1 (n = )
- Reason 2 (n = )
- Reason 3 (n = )

Reports not retrieved (n = )

*Consider, if feasible to do so, reporting the number of records identified from each database or register searched (rather than the total number across all databases/registers).

**If automation tools were used, indicate how many records were excluded by a human and how many were excluded by automation tools.