Does nurse-led pre-operative assessment reduce the cancellation rate of elective surgical in-patient procedures: a systematic review of the research literature

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CRD summary
The review assessed whether pre-assessment by a nurse reduces the number of elective surgical operations that are cancelled on the day of surgery. The evidence was weak and it was uncertain that pre-assessment reduced cancellations. This was an appropriate interpretation of the evidence reviewed. The review might not have included all relevant studies.

Authors' objectives
To determine if nurse-led pre-operative assessment (POA) reduces the cancellation rate of in-patient elective surgical procedures.

Searching
MEDLINE (from 1966), CINAHL (from 1982) and EMBASE (from 1988) were searched to March 2005; the search strategy was reported. There were no language restrictions but only published studies were sought. The Cochrane Library was searched for existing systematic reviews.

Study selection
Study designs of evaluations included in the review
Randomised controlled trials (RCTs), and prospective and retrospective cohort studies were eligible for inclusion. The prospective studies had to have more than 80% follow-up to be included.

Specific interventions included in the review
Studies of nurse-led POA carried out prior to hospital admission were eligible for inclusion. The time of assessment in the included studies varied from 10 days to 4 weeks before admission for surgery. Some patients in one study were seen following their out-patient appointment. In two studies the nurses’ decisions on all assessed patients were checked by a doctor; in one study only assessments judged by the nurse to be of concern were checked by a doctor; and in one study the independence of the nurses’ decisions was unclear. All of the included studies were conducted in the UK.

Participants included in the review
Studies of adult in-patients undergoing elective surgery were eligible for inclusion. Studies of day surgery patients were excluded. The types of surgery in the included studies were total hip or knee replacement, urology and general surgical procedures.

Outcomes assessed in the review
Studies that reported surgical cancellation rates were eligible for inclusion. The review reported on cancellation rates on admission for surgery or on the day of surgery.

How were decisions on the relevance of primary studies made?
The author did not state how the papers were selected for the review, or how many reviewers performed the selection.

Assessment of study quality
A published checklist was used to assess the validity of the included studies. The criteria included the clarity of the study question, prospective or retrospective design, similarity between exposed and control groups, follow-up, and the measure and size of effect. Sample size calculation was also recorded. The author did not state how the validity assessment was performed.
Data extraction
The author did not state how the data were extracted for the review, or how many reviewers performed the data extraction. The numbers of patients who had surgery cancelled on admission in the exposed and control groups, and the reasons for cancellation, were extracted. The results of tests of statistical significance were also extracted.

Methods of synthesis
How were the studies combined?
The review provided a narrative summary.

How were differences between studies investigated?
A narrative description of the characteristics of each included study enabled a comparison between the studies and highlighted particular strengths and weaknesses of the individual studies.

Results of the review
Four cohort studies were included. The total number of participants was 3,667. One study was retrospective; it was unclear whether the other three studies were prospective or retrospective regarding data collection.

In one study there were no cancellations for reasons that could have been foreseen at POA among 59 patients assessed by a nurse specialist or among the control group of 52 patients seen by a doctor.

In the largest study, 8 (0.4%) of 2,762 patients were cancelled on admission for reasons that could have been resolved at the POA. The comparative rate of cancellation for the Health Trust was 10.9%. However, it was uncertain that nurse-led POA was solely responsible for the lower rate of cancellations in the study population, owing to other differences between the ward investigated and the rest of the Trust.

In another study there were 8 cancellations out of 314 patients who had attended the POA clinic over a period of 2 years, compared with 12 out of 162 in the control year before the POA clinic was established. Cancellation due to POA failure could not be ascertained with certainty because the reasons for cancellation were not specified.

The fourth study reported two cancellations (1.1%) for preventable reasons out of 179 patients who underwent POA, compared with 10 (5.9%) of 175 patients in the control group (p<0.05). This corresponded to a 46% absolute reduction in the risk of cancellation (number-needed-to-treat 22).

Authors’ conclusions
It was uncertain that POA reduced the rate of adult elective surgery cancellations.

CRD commentary
The review addressed a clear question. Although several databases were searched for published studies the search could have missed relevant studies not indexed on the databases searched. Furthermore, possible publication bias, which the author acknowledged, could mean that studies with favourable results were more likely to be included. The derivation of the search strategy was reported in sufficient detail to allow an independent assessment of its sensitivity to identify relevant studies, including international literature (should readers query why studies conducted outside the UK and studies published in languages other than English were not identified). The review appeared to have been conducted by a single author and no methods to minimise reviewer bias or errors in the study selection, data extraction or validity assessment processes were reported. Appropriate aspects of study quality were assessed systematically. The description of the individual study characteristics was thorough. The narrative synthesis was appropriate and study quality was taken into account in the interpretation of the findings. On the basis of the evidence reviewed, the author’s conclusion is appropriate.

Implications of the review for practice and research
Practice: The author did not state any implications for practice.

Research: The author stated that a cohort study large enough to detect a difference between a well-matched exposed and control group is needed.

Bibliographic details

Indexing Status
Subject indexing assigned by CRD

MeSH
Appointments and Schedules; Efficiency, Organizational; Nursing Assessment /organization & administration; Outpatient Clinics, Hospital /organization & administration; Patient Admission; Preoperative Care /nursing; Referral and Consultation; Surgery Department, Hospital /organization & administration; Elective Surgical Procedures /contraindications

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This is a critical abstract of a systematic review that meets the criteria for inclusion on DARE. Each critical abstract contains a brief summary of the review methods, results and conclusions followed by a detailed critical assessment on the reliability of the review and the conclusions drawn.